THE AMERICAN YEAR BOOK

UNIVERSITY OF ILLINOIS
UNDERGRADUATE DIVISION
CHICAGO
LIBRARY

THE AMERICAN YEAR BOOK

Digitized by the Internet Archive
in 2026

https://archive.org/details/american-year-book_1946

THE AMERICAN YEAR BOOK

A Record of Events and Progress

YEAR 1946

EDITOR

WILLIAM M. SCHUYLER

LATER EDITION
IN LIBRARY
(SEE CATALOG)

EDITED WITH THE COOPERATION OF A SUPERVISORY BOARD REPRESENTING NATIONAL LEARNED SOCIETIES

U OF I
LIBRARY

NEW YORK
THOMAS NELSON & SONS
1947

Copyright, 1947
BY THE AMERICAN YEAR BOOK CORPORATION
All rights reserved

PRINTED IN THE UNITED STATES OF AMERICA BY
THE COLONIAL PRESS INC., CLINTON, MASSACHUSETTS

E
171
A585
1946

PREFACE

This issue of The American Year Book contains the record of the first full calendar year of nominal peace since 1939. The term *peace* is used advisedly to distinguish the year 1946 from the preceding years of combat warfare. In other connotations of the word, its employment tends to be not a little ironical. The record shows that there has been more strife than peace in the industrial world and in the political world as well. Whether this state of affairs portends revolutionary change or a beginning in evolutionary change remains for the future to reveal. The record as set down in this volume can at this time show only the events as they have developed through the twelve months, with such interpretation as may be prudently ventured upon amid rapidly shifting scenes and the generally unstable outlook. Nevertheless this record has definite value in its presentation of actions and reactions as a guide to possible trends for readers of the present and as source material for historians of the future.

The narrative as a whole is neither satisfactorily encouraging nor completely discouraging. Primarily it reveals a consistent and forceful struggle for solution of national social and industrial problems and for adjustment of international differences in political ideologies. Such a struggle is the core of progress. It brings into the open questions of high import that must eventually be answered definitively. It is deceptive to be discouraged by the intensity of the struggle as it is complacent to be encouraged by the falsity of appeasement. Neither attitude is justified by the events of the day. The merits of the case, national and international, are the basis for guidance and study. Labor in this country has become militant under the stress of rising prices and social maladjustments. The strike picture, therefore, looms large in the narrative. Some of the coloring is bright, some is dismal. Time will doubtless tone down the one and mitigate the other. The same applies to the price picture though in lesser degree since controls with a few exceptions have been removed. Housing, production, public works construction, and financial burdens imposed by foreign relief, international trade revival, and maintenance of service forces abroad, are factors pervading most of the multifarious activities reported in this volume.

In the political field, the year 1946 was a year of profound significance. With the establishment of the seat of the United Nations in New York and vicinity, the United States became in a sense the world capital, bringing to this country a remarkable assemblage of political figures and cultural experts from all over the world. The labors of the Foreign Ministers in their searching quest for permanent peace formulas are duly recorded. The November elections focused the world's attention on our immediate political future. The elections seemed to express a phase of war weariness that demands change in the hope that change can not make a bad situation worse and may make it better. The makers of The American Year Book have striven to present a practical compendium of the year's events to which allusion has been made here and of the many other events which the limitations of this preface necessarily exclude.

8136

TABLE OF CONTENTS

PREFACE v

OFFICERS OF THE AMERICAN YEAR BOOK CORPORATION x

CONSTITUENT SOCIETIES AND SUPERVISORY BOARD xi

CONTRIBUTORS xv

PART ONE: POLITICAL—NATIONAL AND INTERNATIONAL

DIVISION PAGE

I. AMERICAN POLITICAL HISTORY 1
The President and His Policies.—National Personalities.—The Year in Congress.—The Supreme Court and Constitutional Law.—Federal Administrative Agencies.—Elections of 1946.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES . . 74
The United Nations.—The United States and the Peace Treaties.—The United States and Europe.—Occupied Japan.—The Republic of the Philippines.—The United States and Latin America.—The United States and the Middle East.—Foreign Service of the United States.—Dissolution of the League of Nations.—Chronology of International Affairs.

PART TWO: AMERICAN GOVERNMENT

III. THE NATIONAL GOVERNMENT 155
Federal Administrative Organization.—Members of the Senate and House of Representatives.—Federal Judicial Organization.—Civil Service in the United States.

IV. STATE GOVERNMENT 173
State Administration and Legislation.—National and Interstate Relations of States.—State Constitutions, Referenda, and Initiatives.—Electoral Legislation.—County Government.

V. MUNICIPAL GOVERNMENT 206
New York City Affairs.—Municipal Political Trends.—Municipal Functions.

VI. TERRITORIES AND SPHERES OF AMERICAN INFLUENCE . . . 225
Alaska.—Hawaii.—Puerto Rico.—Virgin Islands of the United States.—Guam and American Samoa.—District of Columbia.

PART THREE: GOVERNMENTAL FUNCTIONS

DIVISION PAGE

VII. Public Finance and Taxation . . . 249
National Finance and the Public Debt.—State Finance and Taxation.—Municipal Finance.—Federal Income and Profits Taxes.—Land and Property Taxes.—Corporation and Bank Taxes.—Estate and Inheritance Taxes.—Automobile Taxes.

VIII. Public Resources and Utilities 286
Federal Surveys and Maps.—State Geological Surveys.—Reclamation and Irrigation.—Public Lands.—Public Utilities.—Water Supply.—Street and Highway Traffic.

IX. Defense and Armament 342
The United States Army.—Administration of Veterans Affairs.—Naval Construction and Equipment.—Waterways and Harbors.

PART FOUR: ECONOMICS AND BUSINESS

X. Business and Finance . . 382
Economic and Business Conditions.—The Security and Money Markets.—Banking Affairs.—Trust Business.—Foreign Exchange.—Foreign Trade.—Foreign Trade Policies.—Public Accounting.—Life Insurance.—Fire Insurance.—Marine Insurance.—Casualty Insurance and Corporate Suretyship.

XI. Agriculture and Allied Industries . 458
Conditions in Agriculture.—Cotton, Grain and Other Field Crops.—The Dairy Industry.—Insect Pests and Plant Quarantines.—Fisheries.—Forestry.

XII. Mineral Industries 500
Gold, Silver and Platinum.—Iron and Steel.—Non-Ferrous Metals.—Petroleum.

XIII. Manufactures and Transportation . 521
Conditions in Manufacturing.—The United States Tariff Commission.—Administration of Tariff Laws.—Railroads.—Highways.—The Motor Bus Industry.—Community Transit.—The Merchant Marine.—Commercial Aviation.

PART FIVE: SOCIAL CONDITIONS AND AIMS

XIV. Population and Migration 575
Population Statistics.—Race Conditions in the United States.—American Indian Affairs.

XV. Social Problems and Conditions . 601
Public Social Work and Welfare.—Housing.—Prisons and Crime Control.

XVI. Labor and Labor Legislation 621
Labor Conditions and Legislation.—Employment and Unemployment Statistics.—Child Labor.

TABLE OF CONTENTS

DIVISION PAGE

XVII. RELIGION AND RELIGIOUS ORGANIZATIONS 654
Interdenominational Activities.—Protestant Denominational Activities.—The Roman Catholic Church.—The Eastern Churches.—Judaism and Jewish Communal Affairs.

PART SIX: SCIENCE—APPLICATION AND PRINCIPLES

XVIII. MATHEMATICS AND ASTRONOMY 695
Mathematics.—Statistical.—Analytical.—Astronomy.—Astronomers and Observatories.—Radar and the Moon.—Solar Observations from Rockets.—Lunar Occultations of Stars.—Cosmic Events.

XIX. ENGINEERING AND CONSTRUCTION 708
Structural Engineering.—Mechanical Engineering.—Electrical Engineering.—Radio.—Technical Progress in Sound Equipment.—Naval Architecture and Marine Engineering.

XX. GEOPHYSICAL SCIENCES 751
Earthquakes and Volcanoes.—Mineralogy and Petrography.—Terrestrial Magnetism and Electricity.—Meteorology and Climatology.—American Exploration.—Oceanography.

XXI. CHEMISTRY AND PHYSICS 776
Physical Chemistry.—Physics.—Organic and Inorganic Chemistry.—Electrochemistry.

XXII. BIOLOGY 797
Organic Evolution and Genetics.—Entomology.—Botany.—Economic Botany.

XXIII. MEDICAL SCIENCES 822
Medicine. — Pathology. — Physiology. — Surgery. — Public Health.—Dentistry.—Vital Statistics.

XXIV. PSYCHOLOGY AND PHILOSOPHY 856
Psychology.—Philosophy.—Anthropology and Ethnology.

PART SEVEN: THE HUMANITIES

XXV. LITERATURE AND LANGUAGE 873
Fiction.—Poetry.—History.—Biography.—Travel.—Criticism and Belles Lettres.—English Language and Literature.—Germanic Languages and Literatures.—Romance Languages and Literatures.—Latin Literature.—Greek Literature.—Semitic Languages and Literatures.—Slavic Languages and Literatures.—Indo-European Linguistics.

XXVI. THE ARTS 949
Archaeology.—Painting.—Sculpture.—Music and the Opera.—The Theatre.—Motion Pictures.

XXVII. EDUCATION 993
Elementary Education.—Secondary Education.—Higher Education.—Education for the Professions.—Adult Education.—Negro Education.—Libraries.

NECROLOGY 1062

THE AMERICAN YEAR BOOK CORPORATION

President

Colonel Marston Taylor Bogert

Vice President and Secretary

George A. Stetson

Board of Directors

Colonel Marston Taylor Bogert, *ex officio*
George A. Stetson, *ex officio*
Mrs. William H. Purdy
Dr. Ernest M. Patterson
Dr. Milton James Ferguson
Dr. Frank W. Notestein

* Deceased, April 20, 1946.

CONSTITUENT SOCIETIES AND SUPERVISORY BOARD

SOCIETIES AND REPRESENTATIVES

1. **ACTUARIAL SOCIETY OF AMERICA.**
   James S. Elston, Travelers Insurance Co., Hartford, Conn.

2. **AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.**
   Dr. Ernest M. Patterson, University of Pennsylvania, Philadelphia, Pa.

3. **AMERICAN ANTHROPOLOGICAL ASSOCIATION.**
   Dr. Clark Wissler, American Museum of Natural History, New York City.

4. **AMERICAN ANTIQUARIAN SOCIETY.**
   Clarence S. Brigham, Worcester, Mass.

5. **AMERICAN ASSOCIATION OF ECONOMIC ENTOMOLOGISTS.**
   Dr. L. M. Peairs, Editor, *Journal of Economic Entomology*, Morgantown, W. Va.

6. **AMERICAN ASSOCIATION OF MUSEUMS.**
   Dr. Laurence Vail Coleman, Director, American Association of Museums, Washington, D. C.

7. **AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**
   Professor Edwin G. Conklin, Princeton University, Princeton, N. J.

8. **AMERICAN ASTRONOMICAL SOCIETY.**
   Professor Henry Norris Russell, Princeton University, Princeton, N. J.

9. **AMERICAN BAR ASSOCIATION.**
   George Wharton Pepper, Land Title Building, Philadelphia, Pa.

10. **AMERICAN CHEMICAL SOCIETY.**
    Colonel Marston T. Bogert, 1158 Fifth Avenue, New York City.

11. **AMERICAN COUNCIL OF LEARNED SOCIETIES.**
    Dr. Waldo G. Leland, 907 Fifteenth Street, Washington, D. C.

12. **AMERICAN ECONOMIC ASSOCIATION.**
    Professor Frederick S. Deibler, Northwestern University, Evanston, Ill.

13. **AMERICAN FEDERATION OF ARTS.**
    Duncan Phillips, Director, Phillips Memorial Gallery, Washington, D. C.

14. **AMERICAN HISTORICAL ASSOCIATION.**
Professor Thomas C. Cochran, New York University, New York City.

15. **AMERICAN INSTITUTE OF ACCOUNTANTS.**
John L. Carey, Secretary, American Institute of Accountants, 13 East 41st Street, New York City.

16. **AMERICAN INSTITUTE OF ARCHITECTS.**
Charles T. Ingham, 1741 New York Avenue, Washington, D. C.

17. **AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.**
Henry H. Henline, 33 West 39th Street, New York City.

18. **AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS.**
Professor Bradley Stoughton, Lehigh University, Bethlehem, Pa.

19. **AMERICAN LIBRARY ASSOCIATION.**
Dr. Milton James Ferguson, Librarian, Brooklyn Public Library, New York City.

20. **AMERICAN MATHEMATICAL SOCIETY.**
Professor G. T. Whyburn, University of Virginia, Charlottesville, Va.

21. **AMERICAN MEDICAL ASSOCIATION.**
Dr. Frederic E. Sondern, 180 W. 58th St., New York City.

22. **AMERICAN ORIENTAL SOCIETY.**
Dr. Ludlow Bull, Metropolitan Museum of Art, New York City.

23. **AMERICAN PHILOLOGICAL ASSOCIATION.**
Professor George Depue Hadzsits, University of Pennsylvania, Philadelphia.

24. **AMERICAN PHILOSOPHICAL SOCIETY.**
Professor Gilbert Chinard, Princeton University, Princeton, N. J.

25. **AMERICAN PHYSICAL SOCIETY.**
Dr. Henry A. Barton, American Institute of Physics, 175 Fifth Ave., New York City.

26. **AMERICAN POLITICAL SCIENCE ASSOCIATION.**
Professor Arthur N. Holcombe, 573 Widener Library, Cambridge. Mass.

27. **AMERICAN PUBLIC HEALTH ASSOCIATION.**
Dr. Reginald M. Atwater, Executive Secretary, The American Public Health Association, 1790 Broadway, New York 19, N. Y.

28. **AMERICAN SOCIETY OF CIVIL ENGINEERS.**
Colonel W. N. Carey, 29 West 39th Street, New York City.

29. **AMERICAN SOCIETY OF INTERNATIONAL LAW.**
Professor George Grafton Wilson, Harvard University. Cambridge, Mass.

30. **AMERICAN SOCIETY OF MECHANICAL ENGINEERS.**
George A. Stetson, 29 West 39th Street, New York City.

31. **AMERICAN SOCIETY FOR TESTING MATERIALS.**
C. LAURENCE WARWICK, 260 South Broad Street, Philadelphia.

32. **AMERICAN SOCIOLOGICAL SOCIETY.**
PROFESSOR L. L. BERNARD, Washington University, St. Louis, Mo.

33. **AMERICAN STATISTICAL ASSOCIATION.**
DR. FRANK W. NOTESTEIN, Director, Office of Population Research. School of Public and International Affairs, Princeton University, Princeton, N. J.

34. **AMERICAN VOCATIONAL ASSOCIATION, INC.**
L. H. DENNIS, 1010 Vermont Avenue, Washington, D. C.

35. **ARCHAEOLOGICAL INSTITUTE OF AMERICA.**
STEPHEN B. LUCE, General Secretary, Archaeological Institute of America, Harvard Divinity School, Cambridge, Mass.

36. **GENERAL FEDERATION OF WOMEN'S CLUBS.**
MRS. WILLIAM H. PURDY, 136 Park Avenue, Mount Vernon, N. Y.

37. **GEOLOGICAL SOCIETY OF AMERICA, INC.**
H. R. ALDRICH, Secretary, Geological Society of America, 419 W. 117th St., New York City.

38. **INSTITUTE OF RADIO ENGINEERS.**
DR. A. N. GOLDSMITH, 580 Fifth Avenue, New York City.

39. **NATIONAL ACADEMY OF SCIENCES.**
DR. R. E. SHOPE, Rockefeller Institute of Medical Research, Princeton, N. J.

40. **NATIONAL AERONAUTIC ASSOCIATION.**
GODFREY L. CABOT, 242 Beacon Street, Boston, Mass.

41. **NATIONAL CONFERENCE OF SOCIAL WORK.**
CHENEY C. JONES, The New England Home for Little Wanderers, 161 South Huntington Avenue, Boston, Mass.

42. **NATIONAL EDUCATION ASSOCIATION.**
CHANCELLOR HARRY WOODBURN CHASE, New York University, New York City.

43. **NATIONAL GEOGRAPHIC SOCIETY.**
DR. GILBERT GROSVENOR, Washington, D. C.

44. **NATIONAL MUNICIPAL LEAGUE.**
ALFRED WILLOUGHBY, Executive Secretary, National Municipal League, 299 Broadway, New York 7, N. Y.

45. **PALEONTOLOGICAL SOCIETY.**
ASSOCIATE PROFESSOR B. F. HOWELL. Princeton University, Princeton, N. J.

46. **THE SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS.**
Temporarily unrepresented.

CONTRIBUTORS

Bernabe Africa: THE REPUBLIC OF THE PHILIPPINES.
Under Secretary of Foreign Affairs, Republic of the Philippines.

William Anthony Aery, M.A., Ph.D.: NEGRO EDUCATION.
Educator and Author; Administrative Assistant, NACA Langley Memorial Aeronautical Laboratory

H. K. Allen, Ph.D.: MUNICIPAL FINANCE.
Associate Professor of Economics and Director of the Bureau of Economic and Business Research, University of Illinois.

Robert E. Allen: PETROLEUM.
Director of Information, American Petroleum Institute.

P. N. Annand, Ph.D.: INSECT PESTS AND PLANT QUARANTINES.
Chief, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, Department of Agriculture.

Robert W. Bachelor: BANKING AFFAIRS.
Director, Research Council, American Bankers Association.

May Lamberton Becker: FICTION; CRITICISM AND BELLES LETTRES.
Readers' Guide, *New York Herald Tribune.*

G. L. Beers: RADIO.
Assistant Director of Engineering, RCA Victor Division, Radio Corporation of America.

James V. Bennett, A.B., LL.B.: PRISONS AND CRIME CONTROL.
Director, Bureau of Prisons, Department of Justice.

L. Howard Bennett: RACE CONDITIONS IN THE UNITED STATES.
Field Consultant, American Council on Race Relations; Julius Rosenwald Fellow in Public Administration and Public Law, University of Chicago.

Mary Sumner Benson, Ph.D.: THE YEAR IN CONGRESS.
Professor of History and Government, Milwaukee-Downer College, Milwaukee, Wis.

Rose V. S. Berry: SCULPTURE.
Associate Editor, *Art and Archaeology;* writer and critic.

Florence Seville Berryman, A.B.: PAINTING.
The American Federation of Arts; Art Critic, *The Washington Star.*

Carman G. Blough: PUBLIC ACCOUNTING.
Research Director, American Institute of Accountants.

Clinton L. Bogert: WATER SUPPLY.
Consulting Engineer, New York.

Witt Bowden, Ph.D.: Labor and Labor Legislation.
Labor Economics Staff, Bureau of Labor Statistics, Department of Labor.

Omar N. Bradley: Administration of Veterans Affairs.
General, U.S.A.; Administrator, Veterans Administration.

Everett S. Brown, B.L., M.L., Ph.D.: The President and His Policies.
Chairman and Professor, Department of Political Science, University of Michigan.

Robert M. Brown, Ed.D.: American Exploration.
Professor of Geology and Economic Geography, Rhode Island College of Education.

Thomas C. Campbell: Iron and Steel.
News-Markets Editor, *The Iron Age*.

William J. Carson: National Finance and the Public Debt.
Associate Professor of Finance, Wharton School of Finance and Commerce, University of Pennsylvania; Executive Director, National Bureau of Economic Research, Inc.

Henry Chalmers, B.A., M.A., Ph.D.: Foreign Trade Policies.
Consultant on Commercial Policy, Department of Commerce.

Selden Chapin: Foreign Service of the United States.
Director General of the Foreign Service, State Department.

Arthur P. Chew: Conditions in Agriculture.
Assistant to the Director of Information, U. S. Department of Agriculture.

Charles F. Conlon: State Finances and Taxation.
Executive Director, Federation of Tax Administrators, Chicago.

Brevard E. Crihfield: State Administration and Legislation.
The Council of State Governments.

Robert E. Cushman, Ph.D.: The Supreme Court and Constitutional Law.
Professor, Department of Government, Cornell University.

Mary C. Davis, Ph.D.: County Government.
New Jersey College for Women, New Brunswick, N. J.

Albert M. Day, B.S.: Fisheries.
Director, Fish and Wildlife Service, Department of the Interior.

Morris F. de Castro: Virgin Islands of the United States.
Acting Governor of the Virgin Islands of the United States.

August Derleth: Poetry.
Director, Arkham House, Sauk City, Wis.

L. P. Disney: Oceanography.
Chief, Section of Predictions, U. S. Coast and Geodetic Survey, Department of Commerce.

Howard J. Dittmer, Ph.D.: Botany.
Assistant Professor of Biology, University of New Mexico.

Edwin T. Duffy: The Theatre.
News Staff, *The New York Times.*

Halbert L. Dunn, M.D., Ph.D.: Vital Statistics.
Chief, Vital Statistics Division, Bureau of the Census, Department of Commerce.

Max A. Egloff: Puerto Rico.
Director of Information, Office of the Governor of Puerto Rico.

James S. Elston: Life Insurance.
Assistant Actuary, Travelers Insurance Co.

Colin G. Fink, Ph.D., D.Sc.: Electrochemistry.
Head, Division of Electrochemistry, Columbia University; Secretary, The Electrochemical Society.

R. V. Fletcher: Railroads.
President, Association of American Railroads.

C. A. Freeman: Administration of Tariff Laws.
Chief, Statistics Section, Division of Fiscal Administration, Bureau of Customs, Treasury Department.

Roger B. Friend, Ph.D.: Entomology.
Head, Department of Entomology, The Connecticut Agricultural Experiment Station, New Haven, Conn.; State Geologist.

Clifford Frondel, Ph.D.: Mineralogy and Petrography.
Associate Professor, Department of Mineralogy, Harvard University.

C. F. Fuechsel: Federal Surveys and Maps.
Chief, Map Information Office, U. S. Geological Survey, Department of the Interior.

Wilma Leslie Garnett, Ph.D.: Elementary Education.
Department of English, Kent (Ohio) State University.

John Gilchrist: The Roman Catholic Church.
Secretary, Bureau of Information, National Catholic Welfare Conference.

Robert S. Gilchrist, Ph.D.: Secondary Education.
Assistant Superintendent of Public Schools, Minneapolis, Minn.

Myron Gordon, Ph.D.: Organic Evolution and Genetics
Research Associate in Genetics, New York Zoological Society.

Ernest Gruening, Ph.D.: Alaska.
Governor of the Territory of Alaska.

Mildred F. Guffin: Automobile Taxes.
Tax Research Librarian, Bureau of Research and Statistics, New York State Department of Taxation and Finance.

Winifred Nelson Hadsel: The United Nations; The United States and the Peace Treaties; The United States and Europe.
Research Associate, Foreign Policy Association.

George Depue Hadzsits: LATIN LITERATURE.
Professor of Latin, University of Pennsylvania.

Andrew F. Haiduck, B.S. in M.E.; A.E.: COMMERCIAL AVIATION.
General Manager, Duramold Division, Fairchild Engine and Airplane Corporation, Jamestown, N. Y.

Walter E. Hanson: STRUCTURAL ENGINEERING.
Assistant Professor of Civil Engineering, University of Illinois.

Edward R. Hardy: FIRE INSURANCE.
Secretary-Treasurer, Insurance Institute of America, Inc.

Edward R. Hardy, Jr., Ph.D.: THE EASTERN CHURCHES.
Associate Professor of Church History, Berkeley Divinity School, Yale University.

H. D. Harradon: TERRESTRIAL MAGNETISM AND ELECTRICITY.
Department of Terrestrial Magnetism, Carnegie Institution of Washington.

Guy C. Hecker: COMMUNITY TRANSIT.
Executive Manager, American Transit Association.

M. T. Henderson: ECONOMIC BOTANY.
Associate Professor of Agronomy, School of Agriculture, The Pennsylvania State College.

Houghton Holliday, D.D.S.: DENTISTRY.
Associate Dean, School of Dental and Oral Surgery, Columbia University.

Thomas N. Hoover: ELECTIONS OF 1946.
Professor of History, Ohio University.

Solomon S. Huebner, B.S., M.S., Ph.D.: ECONOMIC AND BUSINESS CONDITIONS; SECURITY AND MONEY MARKETS.
Professor of Insurance and Commerce, University of Pennsylvania.

Wilbur S. Hulin, Ph.D.: PSYCHOLOGY.
Professor of Psychology, Pacific University, Forest Grove, Ore.

Walter Renton Ingalls, D.Eng.: GOLD AND SILVER; NON-FERROUS METALS.
Consulting Engineer, New York.

Joseph J. Jaklitsch, Jr., M.E.: MECHANICAL ENGINEERING.
Editorial Department, The American Society of Mechanical Engineers.

Richard Jente: GERMANIC LANGUAGES AND LITERATURES.
Head, Department of Germanic Languages, University of North Carolina.

Fred W. Johnson: PUBLIC LANDS.
Acting Director, Bureau of Land Management, Department of the Interior.

Jotham Johnson, Ph.D.: ARCHAEOLOGY.
Assistant Professor of the Classics, New York University.

Mortimer M. Kassell: ESTATE AND INHERITANCE TAXES.
Deputy Commissioner and Counsel, New York State Department of Taxation and Finance.

J. O. Keller, M.S.: ADULT EDUCATION.
Assistant to the President, The Pennsylvania State College.

McFall Kerbey: TRAVEL.
Chief, Research Division, National Geographic Society.

Anthony J. Klancar: SLAVIC LANGUAGES AND LITERATURES.
Writer and Editor.

Paul L. Koenig: COTTON, GRAIN, AND OTHER FIELD CROPS.
Head, Division of Agricultural Statistics, Bureau of Agricultural Economics, and Chairman, U. S. Crop Reporting Board, Department of Agriculture.

Donald Nelson Koster, Ph.D.: ENGLISH LANGUAGE AND LITERATURE.
Assistant Professor of English, Adelphi College, Garden City, N. Y.

Herbert C. Kriesel: THE DAIRY INDUSTRY.
Agricultural Economic Statistician, Bureau of Agricultural Economics, Department of Agriculture.

Wilson M. Laird, Ph.D.: STATE GEOLOGICAL SURVEYS.
State Geologist, North Dakota Geological Survey.

George S. Lane, Ph.D.: INDO-EUROPEAN LINGUISTICS.
Professor of Germanic and Comparative Linguistics, University of North Carolina.

Richard W. Leopold: HISTORY.
Professor, Department of History, Harvard University.

William Leslie: CASUALTY INSURANCE AND CORPORATE SURETYSHIP.
General Manager, National Bureau of Casualty and Surety Underwriters.

Paul M. A. Linebarger: OCCUPIED JAPAN.
Professor, Department of Asiatic Politics, School of Advanced International Studies.

Carol Loucks: LAND AND PROPERTY TAXES.
Senior Municipal Research Assistant, New York State Department of Audit and Control.

Thomas H. MacDonald, B.C.D.: HIGHWAYS.
Commissioner of Public Roads, Federal Works Agency.

Burton W. Marsh, B.S. in C.E.: STREET AND HIGHWAY TRAFFIC.
Director, Traffic Engineering and Safety Department, American Automobile Association.

Erwin E. Martinsky, N.A., M.E.: NAVAL ARCHITECTURE AND MARINE ENGINEERING.
Consultant, Technical Division, United States Maritime Commission.

Ralph McDonald: HIGHER EDUCATION.
Executive Secretary, Department of Higher Education, National Education Association of the United States.

Vernon McKay: THE UNITED STATES AND THE MIDDLE EAST.
Research Associate, Foreign Policy Association.

D'Arcy McNickle: AMERICAN INDIAN AFFAIRS.
Field Representative of the Commissioner of Indian Affairs, Department of the Interior.

Mark Carter Mills, Ph.D.: FEDERAL INCOME AND PROFITS TAXES.
Associate Professor of Economics, Indiana University.

Harry B. Mitchell: CIVIL SERVICE IN THE UNITED STATES.
President, United States Civil Service Commission.

Ernest R. Moore, Ph.D.: ROMANCE LANGUAGES AND LITERATURES.
Associate Professor of Romance Languages, Oberlin College.

W. J. Morlock: TECHNICAL PROGRESS IN SOUND EQUIPMENT.
Manager, Sound and Electronics Department, Engineering Products Division, Radio Corporation of America, Indianapolis, Ind.

George M. Murphy, Ph.D.: PHYSICAL CHEMISTRY.
Associate Professor of Chemistry, Yale University.

Marcus Nadler, B.S., J.D.: FOREIGN EXCHANGE.
Professor of Finance, New York University; Research Director, Institute of International Finance.

William E. Neely: GUAM AND AMERICAN SAMOA.
Lieutenant, USNR; Office of Public Information, Navy Department.

Royal C. Nemiah, Ph.D.: GREEK LITERATURE.
Lawrence Professor of Greek, Department of Classics, Dartmouth College.

Frank Neuman: EARTHQUAKES AND VOLCANOES.
Chief, Section of Seismology, U. S. Coast and Geodetic Survey.

John C. Niedermair: NAVAL CONSTRUCTION AND EQUIPMENT; MERCHANT MARINE.
Chief Naval Architect, Bureau of Ships, Navy Department.

Clark F. Norton, Ph.D.: NATIONAL PERSONALITIES.
Assistant Professor, Department of Political Science, University of Michigan.

Harold M. Olmsted: PUBLIC UTILITIES.
Public Utility Engineer-Accountant; Hearing Examiner, New York State Public Service Commission.

Thomas H. Osgood, Ph.D., M.A., B.Sc., M.S.: PHYSICS.
Head, Department of Physics and Astronomy, Michigan State College.

Kenneth Peterson, Ph.D.: SECONDARY EDUCATION.
Coordinator of Guidance, Tenafly (N. J.) Public Schools.

Chester B. Pond: CORPORATION AND BANK TAXES.
Director, Research and Statistics Bureau, New York State Department of Taxation and Finance.

Warren W. Potter: MUSIC AND THE OPERA.
Editorial Writer, *Musical America.*

Thomas M. Pryor: MOTION PICTURES.
Motion Pictures Department, *The New York Times.*

Edwin J. Pulaski, M.D.: SURGERY.
Major, Medical Corps, USN; Chief, Surgical Research Unit, Brooke General Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas.

H. G. Pyle, B.A., M.A.: ADULT EDUCATION.
Supervisor of Informal Instruction, Extension Service, The Pennsylvania State College.

Charles E. Randall, A.B., M.A.: FORESTRY.
Information Specialist, United States Forest Service, Department of Agriculture.

F. W. Reichelderfer: METEOROLOGY AND CLIMATOLOGY.
Chief, U. S. Weather Bureau, Department of Commerce.

Irma Rittenhouse: EMPLOYMENT CONDITIONS AND STATISTICS.
Division of Placement and Unemployment Insurance, New York State.

Howard L. Russell: PUBLIC SOCIAL WORK AND WELFARE.
Director, American Public Welfare Association.

Oscar B. Ryder: UNITED STATES TARIFF COMMISSION.
Chairman, United States Tariff Commission.

Harry Schneiderman: JUDAISM AND JEWISH COMMUNAL AFFAIRS.
Editor, *The American Jewish Year Book.*

L. Seth Schnitman, Ph.B., LL.B.: CONDITIONS IN MANUFACTURING.
Consulting Economist, Washington, D. C.

William M. Schuyler: FEDERAL ADMINISTRATIVE ORGANIZATION; FEDERAL JUDICIAL ORGANIZATION.
Editor, *The American Year Book* and the *Nelson New Loose-Leaf Encyclopedia.*

Preston King Sheldon: INTERDENOMINATIONAL ACTIVITIES; PROTESTANT DENOMINATIONAL ACTIVITIES.
Editor and Writer.

Dorothea Pye Simon, M.A.: MUNICIPAL FUNCTIONS.
Editorial Assistant, *The Municipal Year Book,* International City Managers' Association.

Herbert A. Simon, Ph.D.: MUNICIPAL FUNCTIONS.
Associate Professor of Political Science, Illinois Institute of Technology.

Theodore H. Skinner: NEW YORK CITY AFFAIRS.
Assistant Professor of Government, New York University.

CONTRIBUTORS

Marian W. Smith, Ph.D.: ANTHROPOLOGY AND ETHNOLOGY.
Professor, Department of Anthropology, Columbia University.

Harry Sohon, E.E.; M.E.E.; Ph.D.: ELECTRICAL ENGINEERING.
Assistant Professor of Electrical Engineering, University of Pennsylvania.

Hamilton Southworth, M.D.: MEDICINE, PATHOLOGY, AND PHYSIOLOGY.
Associate in Medicine, College of Physicians and Surgeons, Columbia University, and Assistant Attending Physician, Presbyterian Hospital and Neurological Institute, New York City.

Ingram M. Stainback: HAWAII.
Governor of the Territory of Hawaii.

Edwin O. Stene, Ph.D.: STATE CONSTITUTIONS, REFERENDA, AND INITIATIVES.
Associate Professor of Political Science and Research Associate, Bureau of Government Research, University of Kansas.

Gilbert T. Stephenson: TRUST BUSINESS.
Director, Trust Research Department, The Graduate School of Banking, American Bankers Association.

Louise D. Stetter: CHILD LABOR.
Assistant in Research and Publicity, National Child Labor Committee.

Carl W. Stocks: MOTOR BUS INDUSTRY.
Editor, *Bus Transportation.*

Michael W. Straus: RECLAMATION AND IRRIGATION.
Commissioner, Bureau of Reclamation, Department of the Interior.

George D. Strayer, Ph.D.: EDUCATION FOR THE PROFESSIONS.
Associate Professor, School of Education, Indiana University.

Graham H. Stuart, Ph.D.: THE UNITED STATES AND LATIN AMERICA.
Professor of Political Science, Stanford University.

Chester Merle Suter, Ph.D.: ORGANIC AND INORGANIC CHEMISTRY.
Associate Director of Research, Sterling-Winthrop Research Institute, Rensselaer, N. Y.

Arthur Sweetser: THE DISSOLUTION OF THE LEAGUE OF NATIONS.
Special Adviser to the Secretary General of the United Nations; President, The Woodrow Wilson Foundation.

Robert S. Thomas, B.A., M.A.: UNITED STATES ARMY.
Military Historian, Historical Division, War Department Special Staff, Washington, D. C.

John A. Tillema, Ph.D., LL.M., S.J.D.: FEDERAL ADMINISTRATIVE AGENCIES.
Professor, Division of Special Students, The George Washington University.

Leon E. Truesdell, Ph.D., Sc.D.: POPULATION STATISTICS.
Chief, Population Division, Bureau of the Census, Department of Commerce.

CONTRIBUTORS

Mary C. Tuomey: LIBRARIES.
Assistant, American Library Association.

Howard F. Vickery: HOUSING.
Director of Information, National Housing Agency.

O. Douglas Weeks, Ph.D.: ELECTORAL LEGISLATION.
Professor, Department of Government, The University of Texas.

Warren Reed West, Ph.D.: DISTRICT OF COLUMBIA.
Professor of Political Science, The George Washington University.

Raymond A. Wheeler: WATERWAYS AND HARBORS.
Lieutenant General, U.S.A.; Chief of Engineers, War Department.

G. T. Whyburn: MATHEMATICS.
Professor, School of Mathematics, University of Virginia.

Rupert Wildt, Ph.D.: ASTRONOMY.
Assistant Professor of Astrophysics, Yale University.

William R. Willard, M.D., Dr.P.H.: PUBLIC HEALTH.
Department of Public Health, Yale University School of Medicine.

Alfred Willoughby: MUNICIPAL POLITICAL TRENDS.
Executive Secretary, National Municipal League.

Grace A. Witherow: FOREIGN TRADE.
Analyst in Charge, U. S. Trade Information Section, International Economics and Statistics Unit, Bureau of Foreign and Domestic Commerce, Department of Commerce.

Ledger Wood: PHILOSOPHY.
Associate Professor, Department of Philosophy, Princeton University.

G. Douglas Young, B.S., S.T.M.: SEMITIC LANGUAGES AND LITERATURES.
Professor of Semitic Languages, Faith Theological Seminary, Wilmington, Del.

Malcolm Oakman Young, B.A., B.L.S.: BIOGRAPHY.
Reference Librarian, Princeton University.

Frederick L. Zimmermann, B.A., A.M.: NATIONAL AND INTERSTATE RELATIONS OF STATES.
Hunter College Faculty; Research Director, New York State Joint Legislative Committee on Interstate Cooperation.

THE AMERICAN YEAR BOOK

THE
AMERICAN YEAR BOOK

A RECORD OF EVENTS AND PROGRESS

PART ONE

POLITICAL—NATIONAL AND INTERNATIONAL

DIVISION I
AMERICAN POLITICAL HISTORY

THE PRESIDENT AND HIS POLICIES

By Everett S. Brown
Professor, University of Michigan

URGES PUBLIC SUPPORT OF PROGRAM

In a radio address to the American people on Jan. 3, 1946, President Truman discussed the issues before Congress, declaring bluntly that in 1946 we would "lay the foundation of our economic structure which will have to serve for generations." Praising Congress for its cooperation in carrying out our foreign policy, the President criticized it for failure to take action on his recommendations in the domestic field, particularly as related to the settlement of industrial disputes, price control, extension of the Second War Powers Act, full employment, unemployment insurance, fair employment practices, minimum wages, comprehensive scientific research, universal training, health and medical care, adequate salaries for Federal employees, presidential succession, and river valley development.

The President urged the people to tell Congressmen their views concerning the problems facing the country.

STATE OF THE NATION—BUDGET MESSAGE

On Jan. 21, 1946 President Truman sent to Congress a 25,000-word document, combining his annual message on the state of the nation with his budget message. He termed establishment of a fair wage structure the most serious difficulty in the path of reconversion and expansion. He said that labor and management must establish better human relationships, adding that, while "no government policy can make men understand each other, agree, and get along unless they conduct themselves in a way to foster mutual respect and good will," the Government could help to develop machinery which, supported by public opinion, would assist labor and management to settle their disagreements in a peaceful manner and reduce the number and duration of strikes. Full employment and greater production were the keynotes of his recommendations.

Besides asking Congress to act on a revised 21-point legislative program which he had hitherto submitted, the President recommended these additional measures: 1—Extension of the price control act for one year from next June 30; 2—Extension of the second war powers act, including priority and inventory controls, beyond June 30, presumably another six months; 3—Continuation of food subsidies beyond June 30 with the proviso that they stop if the cost of living declined below present levels; 4—Legislation creating a permanent housing agency; and 5—Extension of the Selective Service Act beyond the present expiration date of May 16, "in case the campaign for volunteers does not produce" the needed number, the President calling for action on this before April.

In foreign affairs, President Truman told Congress the United States was entering upon a new international era in which many concessions and adjustments would be required and in which the United Nations Organization had to be recognized as the representative of the world as one society. He made it clear that "when difficulties arise among us, the United States does not propose to remove them by sacrificing its ideals or its vital interests." However, he explained the United States did not propose to ignore the ideals and vital interests of its friends. With respect to the smaller nations he said that in peacemaking the smaller nations should have a voice as well as the larger states. He repeated that the 12 points he outlined in his Navy Day speech in New York in 1945 would continue to be the basis of American foreign policy.

A Federal budget for the 1947 fiscal year totaling $35,860,000,000, against anticipated revenues of $31,512,000,000, was recommended to Congress. According to the President, a deficit would be avoided by the use of $4,348,000,000 from the Treasury cash balance, so there would be no addition to the public debt. The President warned against further tax reduction. He said that any such reduction must depend on the budgetary and economic situations. Ill-advised tax reduction would, in his opinion, operate to strengthen dangerously powerful inflationary pressures.

TERRITORIES AND POSSESSIONS

The President urged that Congress promptly take action to admit Hawaii to statehood in the Union, and that similar action be taken with respect to Alaska as soon as it was certain that this was the desire of the people of that territory.

He repeated an earlier recommendation that means be provided by which the people of Puerto Rico might choose their form of government and ultimate status with respect to the United States. He urged that the people of the Virgin Islands be given an increasing measure of self-government, and also that legislation be passed to aid economic rehabilitation for the Philippines. He recommended a greater measure of local self-government for the District of Columbia, including the franchise.

ICKES-PAULEY CONTROVERSY

In a caustic exchange of letters, Harold L. Ickes resigned as Secretary of the Interior and President Truman promptly accepted the resignation, making it effective Feb. 15, 1946, instead of March 31, as Secretary Ickes at first suggested. The resignation was the aftermath of Secretary Ickes' testimony before the Senate Naval Affairs Committee, in which he had charged that Edwin W. Pauley, whose nomination by President Truman for the post of Under Secretary of the Navy was being scrutinized, had tried to get him to drop Federal action for title to oil-bearing tidelands by holding out the promise of large Democratic campaign contributions by California oil men. Ickes characterized this as the "rawest proposition" ever made to him. Pauley, also testifying before the Senate committee, said Ickes was mistaken, and President

Truman sided with Pauley. Ickes thereupon resigned, bluntly declaring that "he did not care to stay in an Administration where he was expected to commit perjury for the sake of the party."

In the face of mounting criticism, Pauley, on March 13, asked the President to withdraw his nomination as Under Secretary of the Navy and the President complied. In a surprise move, he nominated J. A. Krug, former head of the War Production Board, as Secretary of the Interior, a nomination which won the speedy approval of the Senate.

FOOD RELIEF

The President issued a statement Feb. 6, 1946, calling upon the people of the United States to conserve food, particularly wheat products, in order that more food might be sent to the starving peoples of Europe. He stated that the use of wheat in the direct production of alcohol and beer would be discontinued and the use of other grains for the production of beverage alcohol would be limited.

On Feb. 27 President Truman sent telegrams to 12 civic leaders asking them to participate in a White House meeting on March 1 to plan a campaign for public support of a voluntary program of reduced food consumption in the United States in order to increase shipments to famine-ridden countries of Europe and Asia. He named former President Herbert Hoover as honorary chairman of this committee. In order to obtain a first-hand picture of the famine situation, Mr. Hoover made a 35,000-mile trip by plane, visiting 25 countries and receiving information from several more. Upon his return he was asked by President Truman to undertake a further journey to the Latin-American countries.

INTER-AMERICAN DEFENSE

On May 6, 1946, the President submitted to Congress a bill to be entitled "The Inter-American Cooperation Act," authorizing a program of military collaboration with other American States, including the training, organization, and equipment of the armed forces of those countries. Under the provisions of the proposed bill the President would also be authorized to transfer military and naval equipment to the governments of other American States by sale or other method.

According to the President, the bill was drawn up primarily to enable the American nations to carry out their obligations to cooperate in the maintenance of inter-American peace and security under the United Nations Charter and the Act of Chapultepec.

FOREIGN POLICY

In his Army Day address in Chicago on April 6, 1946, President Truman proclaimed a new universal foreign policy designed to oppose aggression the world over, and called for strong military forces to back it up. He declared that the United States must remain strong to preserve peace and protect the weak from outside coercion or penetration. He urged upon Congress the unification of all our armed forces in a single department, temporary extension of the Selective Service Act, and universal training.

The President said that the immediate goal of our foreign policy was to support the United Nations to the utmost. In the Far East our program accordingly was designed to combat and remedy the conditions which made it possible for Japan to attack her neighbors. Part of our strategy of peace is to assist in the rehabilitation and development of Far Eastern countries by extending credits and technical assistance to them. Stressing the importance of the Near Eastern region, the President asserted that the United Nations had "a right to insist that the sovereignty and integrity of the countries of the Near and Middle East must not be threatened by coercion or penetration." For Europe, the President urged the sending of food, machinery, and raw materials. He opposed any return "to the kind of narrow economic nationalism which poisoned international relations and undermined living standards between the two World Wars." He expressed the hope that Congress would approve the financial agreements with Great Britain, not merely to aid Great Britain, but because they were of vital importance to the United States as a means of opening the channels of world trade to American enterprise.

With respect to the Western Hemisphere, President Truman said the United States intended "to join with other sovereign republics of America in a regional pact to provide a common defense against attack." Regarding the control of atomic energy as the greatest challenge resulting from the war, he stated that this country had joined with all the United Nations in a determined effort to devise international action to turn the new force to the service, and not the destruction, of mankind.

DEVELOPMENT AND CONTROL OF ATOMIC ENERGY

President Truman, in a letter of Feb. 2, 1946 to Senator McMahon of Connecticut, urged speedy action on legislation for the domestic development and control of atomic energy. He favored establishment of a committee of three, composed exclusively of civilians, and government ownership and production of fissionable materials, with devices utilizing atomic energy to be made available for private development through licensing of patents and regulation of royalty fees, thus assuring genuine freedom to conduct independent research.

On Oct. 28, President Truman named a commission of five civilians to control the atom bomb. Those appointed were David E. Lilienthal (chairman), Lewis L. Strauss, William W. Waymack, Robert F. Bacher, and Sumner T. Pike. In naming them the President pledged unbending efforts to avoid an atomic war and asserted that mastery of the nuclear force would be used for the good of mankind.

THE LOAN TO BRITAIN

On Jan. 30, 1946, President Truman urged Congress to act promptly on the proposed loan to Great Britain of $3,750,000,000. Declaring that Great Britain needed the credit at once, the President said that it would assist her to meet the expected deficit in her balance of payments during the coming six years and enable her to buy from the world the supplies of food and raw materials essential to the life and work of the British people. He asserted that it would keep open a market for the surpluses of the United States which are customarily exported to the United Kingdom. Furthermore, the President declared, such financial assistance would make it possible for the United States and Great Britain to agree on a course of action which would result in the removal of emergency controls over foreign exchange and discriminatory import restrictions and the re-establishment of peacetime practices designed to promote the recovery of world trade.

FOREIGN LOANS

Transmitting to Congress on March 1, 1946 a report by the National Advisory Council on International Monetary and Financial Problems, President Truman endorsed a policy which limited foreign loans by the United States to $3,250,000,000 until June 30, 1947, excluding the $3,750,000,000 British credit then before Congress. In an accompanying message the President said he would ask Congress to raise the lending authority of the Export-Import Bank by an additional $1,250,000,000, which, with the residual margin of $2,000,000,000, would comprise the contemplated ceiling of $3,250,000,000. The President characterized the successful execution of this policy, which included the implimentation of the financial agreement with Great Britain, as of basic importance to the attainment of the objectives of the economic foreign policy of the United States.

STORM OVER FOREIGN POLICY

A speech made by Secretary of Commerce Henry A. Wallace in Madison Square Garden in New York on Sept. 12 caused a great deal of criticism of President Truman. At a press conference in the afternoon preceding the delivery of the speech, the President said that the speech represented the policy of the Administration. This comment aroused worldwide interest because it was generally felt that the policy laid down by Wallace differed widely from that enunciated by Secretary of State Byrnes at Stuttgart. Diplomats in every country began asking whether the United States was switching from support of Great Britain to a new and friendlier attitude toward Russia. In an attempt to still the controversy, President Truman called a special news conference and issued a statement declaring that there had been no change in the established foreign policy of the Government. He added that his remarks previous to the delivery of the speech by Secretary Wallace had been misconstrued. He had intended to express his approval of the right of Wallace to deliver the speech and not to indicate that he had approved it as a statement of the foreign policy of the country.

Publication a few days later of a letter written by Secretary Wallace to President Truman on July 23, in which Wallace reviewed at length his views on foreign policy, brought again to public attention the division in the President's Cabinet. On Sept. 20, the President asked for Secretary Wallace's resignation. In announcing his action, President Truman declared that the Government of the United States must stand as a unit in its relations with the rest of the world. He said that "our foreign policy as established by the Congress, the President and the Secretary of State remains in full force and effect without change." He expressed his complete confidence in Secretary of State Byrnes.

The President almost immediately named W. Averell Harriman, Ambassador to Great Britain and former Ambassador to Soviet Russia, to the post made vacant by the forced resignation of Secretary Wallace. Harriman declared that he fully supported the foreign policy of President Truman and Secretary of State Byrnes.

PALESTINE POLICY

President Truman issued a statement on Oct. 4 urging Prime Minister Attlee to open Palestine at once to substantial immigration of displaced Jews and pledging the support of the United States Government for the formation of a separate Jewish state in part of the Holy Land. Expressing regret over the adjournment until December of the London conference on Palestine, the President said that refuge for displaced Jews could not wait until winter arrived. He added that he would request Congress for a loosening of United States immigration laws to permit the admission into this country of an unspecified number of displaced persons. He also asked other countries to modify their entry restrictions.

In a letter of Oct. 28 to King Ibn Saud of Saudi Arabia, the President again urged the establishment of a Jewish national home in Palestine and the immediate admission of 100,000 displaced Jews there. Denying that there had been any inconsistency in the Administration's policy, the President recalled that the United States Government had pledged not to take any action hostile to the Arab people. He promised that no fundamental decision on Palestine would be taken without prior consultation with both Jews and Arabs.

POLICY TOWARD UNITED NATIONS ORGANIZATION

When on March 19, 1946 he transmitted to Congress a copy of the report of the activities of the American delegation to the first part of the first session of the General Assembly of the United Nations in London, Jan. 10 to Feb. 14, submitted by Secretary of State Byrnes, President Truman declared emphatically that the United States supported the Charter and sought to achieve its purposes.

Declaring that it would be a world disaster if the United Nations should be divided into irreconcilable parts by different political philosophies, President Truman in his address delivered at the opening session of the General Assembly in New York on Oct. 23, called on that body to set an example of mutual give-and-take for the Big Four. In the course of his address he laid down a definite American program for the session of the General Assembly. This program included agreement on international control of atomic energy and other weapons of mass destruction, establishment of an international police force, and more progress in establishing the International Refugee Organization and other United Nations agencies intended to give the world freedom from want.

The President stressed the point that he considered freedom from fear of war the prime necessity for the world. Asserting that the American people were troubled by the failure of the Allies to make more rapid progress in their search for lasting peace. he drew a distinction between the work of making peace and that of keeping peace after treaties had been concluded. He said that the United Nations could not fulfill its own responsibilities until the foundations of permanent peace had been made by treaties with enemy countries but added this responsibility had been assigned to the Allies, as distinguished from the United Nations. In this connection, the President pledged that the United States would insist upon peace terms which "insured that both Germany and Japan remain disarmed. that Nazi influence in Germany be destroyed and that the power of the war lords in Japan be eliminated forever." Admitting that the war had left many parts of the world in turmoil and that it would not help to pretend that there were no differences among the Allies, he insisted that it was not necessary to exaggerate the differences and that no difference of interest or economic, social, and political systems should be allowed to stand in the way of peace. He promised that the United States would support the United Nations to the full extent of its resources.

PACIFIC BASES

Speaking through his press secretary, Charles G. Ross, President Truman on Nov. 3 reaffirmed his policy over the holding by the United States of bases in the Pacific regarded as needed for security. At a press conference in the previous January, the President had stated as a general proposition that the United States intended to have sole trusteeship over such islands.

POLICY TOWARD CHINA

On Dec. 18 President Truman issued a statement reiterating the policy of the United States toward China and pledging a continuation of American efforts to bring peace and prosperity to that country while avoiding involvement in its internal conflicts. The President praised highly the work done by General George C. Marshall and said the general would remain in China as long as necessary to get his job done. He expressed regret that China had not been able to achieve unity by peaceful methods but continued to hope that a peaceful solution would be found to China's internal problem.

ARMY-NAVY MERGER

On June 14, 1946, President Truman submitted to Congress a plan to merge the armed forces in a single department of National Defense under a Secretary of National Defense as a Cabinet member. Under the Secretary would be secretaries for the Army, Navy, and Air Force, who would serve on a Council of National Defense. The Marine Corps would be maintained within the Navy with its own supporting aircraft. The Council of National Defense would include the Secretary of State, the Secretary of National Defense, the Secretaries for Army, Navy, and Air Force, and the chairman of a proposed National Security Resources Board. The Resources Board would be under the Council and include representatives of Government agencies other than military. The joint Chiefs of Staff would formulate strategic plans, integrate military programs, recommend integration of military budgets and provide for strategic direction of all the military forces. A central intelligence agency, and separate agencies of procurement and supply, coordination of scientific research and development, and for review of systems of education and training of personnel would be established.

NEW DRAFT LAW

Denouncing the hastily passed compromise draft law which exempted 18- and 19-year-olds, President Truman, on May 16, appealed to Congress to act before July 1 to extend selective service for a year in a form that would meet the nation's requirements. He authorized the induction into the armed services of childless men 26 through 29 years old. On Dec. 19 he named a nine-member commission to investigate and submit recommendations on a system of military training.

VETO OF TIDELAND BILL

On Aug. 1 President Truman vetoed the tidelands bill and thereby terminated a long battle to determine by legislation the title of the states to lands underlying tidal waters. President Truman based his veto message on the Government's suit against the State of California, which was still pending before the United States Supreme Court. He stated ownership of the vast quantity of oil contained in land underlying the three-mile coastal belt presented a vital problem for the nation from the standpoint of national defense and conservation, and declared that Congress was not an appropriate forum to determine the legal issue.

WAGE-PRICE POLICY

On Feb. 14, 1946, President Truman modified the national wage-policy "to permit wage increases within certain limits and to permit any industry placed in a hardship position by an approved increase to seek price adjustments without waiting until the end of the six-month period." He emphasized that if the general price level was to remain stable in the next few critical months the immediate price relief in such cases must be conservatively appraised. Taking recognition of the general pattern of wage increases since V-J Day, he authorized the National Wage Stabilization Board to approve any wage increases consistent with that pattern. He explained that where there was no general pattern, his order provided for approval of increases found necessary to eliminate gross inequities between related industries, or to correct substandards of living, or to correct disparities between the increase in wage rates since January, 1941, and the increase in living costs between that date and September, 1945. He warned, however, that the program was not to be interpreted as permitting indiscriminate wage increases.

SEIZURE OF RAILROADS

On May 17, 1946, in the face of a threatened strike of engineers and trainmen, President Truman seized the country's railroads. He asked the workers to remain on duty and directed the Office of Defense Transportation to operate the carriers.

In a radio address on May 24, the President delivered an ultimatum to striking railway trainmen and engineers to return to work by 4 p.m. the next day, otherwise he would place the railroads under military operation. He denounced the walk-out as a strike against the Government and declared that the challenge would be met at all costs. He appealed to the strikers to reject their union leadership and return to work to avert industrial collapse at home and starvation abroad. He announced that he would go before Congress the next day and call for restrictive legislation to prevent the railway or any other strike from imperiling the nation. The President laid the blame for the strike squarely upon the two union leaders, A. F. Whitney of the Trainmen, and Alvanley Johnson, of the Engineers.

REQUEST FOR LABOR LEGISLATION

Conformably with his previous announcement, President Truman addressed a joint session of the two Houses of Congress on May 25, 1946.

He asked for temporary legislation to take care of the immediate labor crisis and permanent legislation leading to the formulation of a long-range labor policy designed to prevent the recurrence of similar crises. The temporary legislation was to apply only to industries in which the President by proclamation declared that an emergency had arisen which affected the entire economy of the United States. It was to be effective only in situations where the President had taken over the operation of the industry. Severe penalties were provided against violators of the act, and the President was to be empowered to draft into the armed forces all workers who were on strike against the Government.

SEIZURE OF SOFT COAL MINES

On May 21, 1946, President Truman issued an executive order directing Secretary of the Interior Krug to take possession of the bituminous coal mines where there were interruptions or threatened interruptions in their operation as a result of strikes. When later in the year, the miners left the pits the President announced his intention of making a radio address on the subject. Speculation as to the trend of his remarks was ended when, on orders from John L. Lewis, the miners returned to work pending a decision of the Supreme Court, and the President canceled his radio appointment.

VETO OF CASE BILL

On June 11, 1946, President Truman vetoed the Case labor disputes bill. He condemned the bill as one that hit at symptoms and ignored underlying causes of industrial strife. He declared that it would not stop strikes and would force men to work under compulsion for private employers in a peacetime economy. The House of Representatives failed by five votes to override the veto. In his veto message the President asked that passage of permanent labor control legislation await a six months' study for a reorientation on basic causes of disputes.

EMERGENCY HOUSING PROGRAM

Submitting to Congress on Feb. 8, 1946 a report by Wilson Wyatt, Housing Expediter, of an emergency housing program for veterans, President Truman asked Congress for its prompt approval of the plan, which called for nearly 3,000,000 moderately priced and low-priced homes and apartments during the next two years. The President said the program had the complete and unqualified support of the Administration.

GOVERNMENTAL REORGANIZATION

Acting under the authority of the Reorganization Act of 1945, President Truman, on May 16, 1946, recommended a number of changes, among them the enlargement in the function of the Federal Security Agency and its eventual elevation to the status of an executive department whose head would join the Cabinet.

As to housing, the President recommended a permanent consolidation in the National Housing Agency of all principal governmental activities relating to that subject. Other proposals related to consolidations, eliminations, and transfers of various offices and agencies.

OPA VETO

In a strongly worded message to the House of Representatives, President Truman, on June 29, vetoed the bill to extend the Office of Price Administration. He declared that the bill was a choice between inflation with a statute and inflation without one, and that it continued the Government's responsibility to stabilize the economy and at the same time destroyed the Government's power to do so. He called upon Congress to act immediately on a bill to give America "adequate assurance of completing a successful transition to a sound peacetime economy." The President went over the bill in detail, singling out for special criticism a price-raising amendment by Senator Taft and amendments by Senators Wherry and Crawford which would benefit distributors and automobile and appliance dealers. President Truman repeated his criticisms of the bill in a radio address.

PRICE CONTROL AND TAX POLICY

On July 25, President Truman reluctantly signed the new Price Control Act but informed Congress that if it proved inadequate he would call a special session to strengthen it and perhaps raise taxes. In his message to Congress the President stated that, while the new law fell far short of being one with which his Administration could guarantee stable prices, it offered "a sufficient prospect of success to warrant the making of a wholehearted effort to keep our economy on an even keel until a flood of goods makes further controls unnecessary." He called upon consumers and businessmen to cooperate with the Government's efforts in the battle against inflation.

CONTROLS ON MEAT LIFTED

In a radio address bitterly criticizing opponents of price regulation, President Truman announced that on the following day, Tuesday, Oct. 15, price controls on meat would be lifted. He stated further that this could not be treated as an isolated transaction but that the program of lifting controls from other commodities, and also from wages, would have to be accelerated. In this way, the President said, we would move steadily toward a free economy and free collective bargaining.

DECONTROL STATEMENT

Convinced that the time had come when the general control over prices and wages no longer served a useful purpose as an instrument against inflation, President Truman issued a statement on Nov. 9 directing immediate abandonment of all control over wages and salaries and all controls over prices except that necessary to implement the rationing and allocation programs of sugar and rice. He declared that rent control, however, must and would be continued.

LIQUIDATION OF ECONOMIC RESTRAINTS

On Dec. 12 President Truman created by executive order a new Office of Temporary Controls to preside over the liquidation of remaining wartime economic restraints and direct the country's return to the free enterprise system. He appointed Major Gen. Philip B. Fleming, Federal Works Administrator, to be the head of the new agency. In setting up the new agency, the President abolished the Office of War Mobilization and Reconversion, the Office of Price Administration, Civil Production Administration, Office of Economic Stabilization, and National Wage Stabilization Board. Their few remaining functions were transferred to the new Office of Temporary Controls.

END OF CURBS ON HOUSING

In a sweeping statement issued on Dec. 14, President Truman opened home building to all citizens in a wide removal of restrictions. The problem of providing homes was turned over to private enterprise with virtually no restraints. The former $10,000 ceiling on the sales price for a new house was removed and priorities for obtaining scarce materials were scrapped. Prohibition of luxury-type housing, however, was continued through a system by which prospective builders must obtain a government permit.

CALL FOR HARMONY

Commenting on the Republican victory in the Congressional election, President Truman issued a statement on Nov. 11 in which he appealed for harmony in foreign and domestic policies and promised to "cooperate in every proper manner with members of the Congress" to attain that end.

PURGE OF DISLOYAL EMPLOYEES

By executive order issued on Nov. 25, President Truman created a new commission to determine standards for judging loyalty of the employees and applicants for Federal employment and to study ways and means of removing or disqualifying from employment any disloyal or subversive person. The commission was to be composed of one representative each of the Departments of Justice, State, Treasury, and War, and of the Civil Service Commission, with the Justice Department representative serving as chairman. After making a report by Feb. 1, 1947, the commission was to go out of existence.

CREATION OF CIVIL RIGHTS BOARD

The President issued an executive order on Dec. 5 creating a committee on civil rights to prepare a report making recommendations looking to the adoption or establishment by legislation or otherwise of more adequate and effective means and procedures for the protection of the civil rights of the people of the United States.

DRAFT-LAW VIOLATORS

On Dec. 23 the President named Owen J. Roberts as head of a three-member amnesty board to review the cases of 11,000 persons convicted of draft-law violations. He directed the board to examine the cases of all persons convicted under the Selective Service Act and to recommend those persons whom it deemed deserving of executive clemency.

LEND LEASE

In transmitting to Congress on Dec. 27 the twenty-third report on the operations authorized under the Lend Lease Act, the President stated that 70 per cent of our lend lease aid to the Allies was considered repaid and that the whole transaction should be regarded as "one of the foundations of economic stability in the post-war world." The report showed that agreements on final settlement had been concluded with the United Kingdom, France, Belgium, Turkey, Australia, New Zealand, and India. Still awaiting negotiation were settlements with the Soviet Union, China, Greece, The Netherlands, Norway, and the Union of South Africa.

PERIOD OF HOSTILITIES ENDED

At a news conference on Dec. 31, President Truman made public a proclamation declaring the period of hostilities ended at noon on that date, thus releasing part of the Government's extraordinary wartime powers. Besides wiping off the statute books immediately a number of emergency laws, his action set many others for an automatic end on June 30, or later, depending on the provisions of the particular laws. The President made it clear that he was not proclaiming the war ended, or the officially declared emergency over.

Among the powers ended at once was that of seizing privately owned plants and mines. In six months, unless Congress enacts new laws providing otherwise, the Government must turn back to private owners the coal mines it now holds. After June 30, a series of emergency taxes, including excise taxes on liquor, furs, jewelry, and other luxuries will drop to old rates. By acting before the close of 1946, the President reduced by one year the period of the Government's guaranteed price support program for farm products, since the law provides that the program should go on for two years beginning with the first day of January immediately after a proclamation ending hostilities.

APPOINTMENTS

On June 5, 1946, President Truman named Senator Warren R. Austin of Vermont as United States representative on the United Nations Security Council as successor to Edward R. Stettinius, Jr., who resigned.

On June 6, the President nominated Secretary of the Treasury Fred M. Vinson to be Chief Justice of the United States and John W. Snyder, the Reconversion Director, to be Secretary of the Treasury. At the same time the President elevated John L. Sullivan to the position of Under Secretary of the Navy.

The appointment of Oliver Max Gardner, Under Secretary of the Treasury, as Ambassador to the Court of St. James was announced by President Truman on Dec. 3.

NATIONAL PERSONALITIES

By Clark F. Norton
Professor, University of Michigan

JAMES F. BYRNES

During his 18 months as Secretary of State James F. Byrnes attended more diplomatic conferences of significance for future world peace than any of his predecessors. Following the 1945 conferences at Potsdam, London, and Moscow, Secretary Byrnes took an active part in the meetings during 1946 of the United Nations General Assembly at London (Jan. 10-24), the United Nations Security Council in New York (March 26-28), the Council of Foreign Ministers in Paris (April 25-May 15; June 15-July 12) and New York (Nov. 4-Dec. 11), and the Allied Nations Peace Conference in Paris (July 29-Oct. 16).

Matters pertaining to the control of atomic energy were of primary concern to Byrnes at the first session of the United Nations General Assembly in London. Before leaving Washington (Jan. 7) he appointed a special five-member committee to study the question and stated emphatically that final action on the disclosure of atomic secrets would require approval by the United States Government. A week later, after warning the General Assembly that nations must not fail to devise necessary safeguards insuring the use of atomic energy for "human welfare," he asked for the adoption of a resolution creating a United Nations Atomic Energy Commission. On the day (Jan. 24) he flew back to Washington, Byrnes told the Assembly that one of the first steps toward peace should be the conclusion of treaties with the nations that had been unwilling war partners of the Axis.

Late in January, the Secretary of State announced that the United Nations Atomic Energy Commission would be invited to watch the atomic bomb tests in the Pacific. In other statements Byrnes denied that the United States had sold machine guns to Spain, denounced political murders by the security police in Poland, and disclosed an agreement made at Yalta providing for Russian possession after the war of the southern half of Sakhalin and the Kuriles.

On February 1, Byrnes refuted reports of a rift between himself and the Chief Executive. He reaffirmed (Feb. 8) the "open door" policy for Chinese trade but belittled (Feb. 12) dispatches from Paris that this country would support Don Juan's aspirations to the Spanish throne. The proposed $3,750,000,000 loan to Great Britain, Byrnes maintained (Feb. 11), would bring "tangible, firm gains for the United States and the rest of the world." Among the measures before Congress which the Secretary of State favored were bills to provide an improved cultural relations and information service in the State Department, to establish a system of universal military training, and to extend the Selective Service Act beyond May 15.

A much sterner attitude toward the Soviet Union was indicated by the Secretary of State when he declared (Feb. 28) that no power had a right "to keep troops in the territories of other sovereign states without their approval" or "to help itself to alleged enemy properties in liberated or ex-satellite countries before a reparation settlement." Furthermore, he warned that the United States would not "stand aloof if force or the threat of force is used contrary to the purposes and principles of the (United Nations) Charter." In accordance with this new policy, he protested (March 5) the retention of Russian troops in Iran, supported (March 5) Chinese resistance to Russian demands in Manchuria, and rejected (March 11) Soviet charges that the United States had been interfering in Bulgaria contrary to the Moscow agreement.

At the United Nations Security

Council's first meeting in New York City (March 25), Byrnes read the welcoming address of President Truman, then represented the United States temporarily on the Council during discussion of the Iranian case where he defended (March 28) the right of a small nation to appear before the Council and press its complaint against a great power.

On April 23 Secretary Byrnes flew to Paris for a meeting of the Council of Foreign Ministers, where he proposed (April 25) that peace treaties be made immediately with Italy and Austria and asked (April 29) that a 25-year pact for the disarmament and demilitarization of Germany be adopted by the four occupying powers. Other ideas broached by him during the conference included a reduction in the number of occupation troops, a plebiscite over the Italian-Yugoslav frontier, and a peace conference of the 21 Allied nations to be held on June 15. After three weeks of disagreement on most of the basic issues, the Council at Byrnes' suggestion recessed (May 15) for one month.

Back in Washington, the Secretary of State threatened (May 20) in a nationwide broadcast that unless the Foreign Ministers agreed to call a peace conference during the summer, the United States would take the case to the United Nations General Assembly for action. A week later he denied (May 28) that there was an Anglo-American bloc trying to impose its will on the world. Further, he noted (May 29) that a primary aim of American foreign policy was the reduction of armaments in all countries to lowest levels commensurate with internal order and international peace.

When the Council of Foreign Ministers resumed deliberations in Paris on June 15, Byrnes succeeded, after a long struggle, in obtaining decisions to convene the peace conference in Paris on July 29 and to allow the conference liberty of action in adopting its own rules of organization and procedure. However, his efforts to adopt a disarmament treaty for Japan and to establish economic unity for Germany failed, except for an agreement with Great Britain looking toward economic consolidation of the British and United States occupation zones.

Reporting again to the American people by radio after the Council adjourned July 12, Secretary Byrnes said (July 15) good progress had been made toward peace with Italy and the satellite nations. However, he deplored Soviet opposition to the American plan for German disarmament and wondered whether the Russians realized the doubts and suspicions they had created in countries that wanted to be their friends.

Returning to Paris by plane on July 27, Secretary Byrnes attempted to placate dissatisfaction among smaller nations by telling (July 30) the delegates to the Peace Conference that the United States would back any recommendation made by a two-thirds vote of the conference, even if it were contrary to the peace treaties agreed to by the Council of Foreign Ministers. Accordingly, he supported (Aug. 5) a British proposal that peace treaty recommendations sent by the conference to the Council of Foreign Ministers should be of two kinds—one requiring a simple majority vote, the other a two-thirds vote—with the understanding that the latter would carry more weight in the Council's deliberations. At the insistence of Byrnes, the five enemy states with whom treaties were being considered were invited (Aug. 7) to attend plenary sessions of the conference.

Russian protests that Great Britain and the United States had formed an Anti-Soviet bloc were described (Aug. 9) by the Secretary of State as "loose and wicked talk." In resentment against the "repeated abuse and misrepresentation which have been leveled against America from this floor," Byrnes told (Aug. 15) the delegates that his nation had "no apology to make for the principles of justice, equality and freedom" which it advocated for the peace treaties. In turn, he criticized continued Russian domination of the economy in the Danube valley countries.

During a short visit to Germany, Byrnes, in a significant speech at

Stuttgart, outlined (Sept. 6) future United States policy toward that nation. In brief he set forth the following aims: economic unification of Germany without delay; establishment of central administrative agencies without regard to zonal barriers; shift "primary responsibility for the running of their own affairs" to the German people by setting up a provisional central government and eventually by democratically framing and adopting a constitution; reduction of occupation forces; and, except for the claims of Russia to Koenigsberg, France to the Saar, and possibly of Poland to Silesia and other areas, no "encroachment on territory which is indisputably German or any division of Germany which is not genuinely desired by the people concerned."

President Truman's firm stand in September, supporting the Secretary of State at the time of Secretary of Commerce Henry Wallace's attack on United States foreign policy, doubtless strengthened Byrnes' position in international affairs. While still in Paris, Byrnes agreed (Oct. 3) with a statement by Premier Stalin that the danger of war was remote, but, calling attention to the serious conflicts in opinion among the Allies, he expressed the hope that unwarranted charges that possession by the United States of the atomic bomb was a threat against the Soviet Union would cease. Discussions in Paris between the Italian Premier and Byrnes led to the announcement (Oct. 12) that the United States would pay Italy $50,000,000 as reimbursement for the lire supplied to American forces to purchase Italian supplies.

At the conclusion of the Paris Conference, Byrnes flew (Oct. 16) to Washington, where he told (Oct. 18) the nation by radio that, while the proposed treaties were "as good as we can hope to get by general agreement now or within any reasonable length of time," he was disturbed by the "continued if not increasing tension between us and the Soviet Union." However, he pledged that the United States would "continue to seek friendship with the Soviet Union and all other states on the basis of justice." Later, Byrnes voiced (Oct. 22) the opinion that United States' credits should not be granted to countries who believe we are trying to enslave them, and expressed (Oct. 25) his "hearty accord" with President Truman's proposal to open Palestine at once to substantial immigration of displaced Jews.

From Nov. 4 to Dec. 11 the Secretary was in almost constant attendance at the meeting in New York City of the Foreign Ministers Council. After the November Congressional elections, he assured (Nov. 11) the world that the Republican victory would not bring about a change in United States foreign policy. With British Foreign Secretary Bevin, he announced (Dec. 3) the economic unification on Jan. 1, 1947, of the British and United States occupation zones in Germany, and once more invited Russia and France to unify all four zones for economic purposes. Despite earlier controversy and delay, the Council made a number of important decisions before its session ended Dec. 11, including agreements on the signing of peace treaties in February for Italy, Rumania, Bulgaria, Hungary, and Finland, on a meeting of the Council in Moscow on March 10, and on the internationalization of Trieste.

Because of his "outstanding service to the American people" and his "efforts toward the attainment of a better, safer world," Secretary Byrnes was awarded (Dec. 3) a certificate of meritorious achievement by the Audubon Artists. *Time* magazine named (Jan. 6, 1947) Byrnes "man of the year" for 1946, describing him as the "firm and patient voice of the U. S. in the councils of the world." On Jan. 7, 1947, Byrnes announced his resignation because of health reasons, and was succeeded by General George C. Marshall, who assumed office Jan. 21, 1947.

BERNARD M. BARUCH

In 1946, Bernard M. Baruch at the age of 75 accepted an assignment as imposing as any he had undertaken during his long career—that of United States representative on the United Nations Atomic Energy Commission. After his nomination by President Truman to this post on March 18, Baruch gave assurances of his convictions that the Atomic Energy Commission could make recommendations but could not compel action by any nation, and that the United States representative thereon could act only according to instructions from the President. Early in April, his nomination was approved by the Senate Foreign Relations Committee and the Senate as a whole.

At the first meeting of the United Nations Atomic Energy Commission (New York City, June 14), Baruch proposed that exclusive control over the necessary raw materials and the production of atomic energy should be vested in an International Atomic Development Authority, established by a treaty under the auspices of the United Nations. Further, he suggested that signers of the treaty renounce use of the atomic bomb, that no veto exist on the action of the Authority, and that violators be considered international criminals and be severely punished. After an adequate system of control had been established, Baruch promised that the United States would stop manufacturing atomic bombs, dispose of any existing bombs, and disclose processing secrets to the Authority. He later recommended (June 28) that, when questions of punishment for atomic energy violations were being considered by the Security Council, the "Big Five" should give up their veto power.

Early in the fall, Baruch became involved in a controversy with the then Secretary of Commerce, Henry A. Wallace, who, in a letter (July 23) to President Truman and in public addresses, had criticized the United States atomic energy suggestions. Baruch claimed (Sept. 24) Wallace had admitted to him that he lacked full knowledge of the facts and had agreed to issue a statement to that effect, but that he had later refused to do so. This led Wallace to accuse (Oct. 3) Baruch of "increasing public confusion" and of trying to force him to give Baruch's atomic energy policies a "blank check endorsement."

This quarrel was renewed over another matter when the first issue (Dec. 16) of the *New Republic* edited by Wallace contained a statement that Baruch had helped fight the Government's case in the coal strike. Baruch branded this as "wholely false and deliberately so," but Wallace denied any responsibility for the article.

In the meantime Baruch refuted (Oct. 1) a charge that he had requested other nations to stop nuclear research and to reveal sources of uranium while the United States retained discretionary control over atomic energy matters. However, he asked (Oct. 9) why the United States should disarm alone. Following Soviet Foreign Minister Molotov's flat rejection of the United States program for atomic control, Baruch stated (Oct. 30) that the United States would accept the Russian plan for a treaty outlawing the atom bomb and would destroy its present stockpile if provision were made for full compulsion of obedience.

On Dec. 5 he once more pleaded with the Atomic Energy Commission to act quickly on his proposals. At the same time he opposed the British plan to couple prohibition of the atomic bomb with a ban on all weapons of mass destruction. Upon presenting (Dec. 17) a formal motion for the adoption of the United States recommendations, Baruch again stressed the urgency of the situation, saying that the "time has come to match our words with action." Opposition that arose over the veto issue led to the adoption (Dec. 20) of a Canadian compromise approving the principles of the American plan and instructing the working committee to submit a report by Dec. 31 based on those principles. A week later Baruch stated flatly that the United States would not take part in any plan to control atomic energy if the veto could be used to protect violators. Finally, on Dec. 30, the Commission approved a system of control almost identical with that originally proposed by Baruch.

Several opinions on national affairs other than atomic energy, voiced by Baruch in 1946, merit review. Declaring that the United States faced a major "political and philosophical issue—statism versus individualism," he claimed (Feb. 24) that the capitalistic system, while not perfect, was the best yet devised and should be repaired rather than torn down. Although he favored extending the Price Control Act, he testified (March 25) before a House committee that other essentials to national economic welfare were increased production, reduced government costs, stabilized money supply, high taxation levels, elimination of work stoppages, and establishment of a high court of commerce. Advancing the thesis that "Freedom can not die but death comes to those who abandon it," Baruch warned (Oct. 13) the nation against repudiating any portion of its freedom. When he presented the eighth annual award of *The Churchman* magazine to General Dwight D. Eisenhower, he stated (Dec. 3) that peace must come only through cooperation and not by appeasement.

In a surprise move on Jan. 4, 1947, Baruch resigned his post on the Atomic Energy Commission, explaining that his main job was done and that it would be better for the United States delegate on the Security Council to finish the task.

ARTHUR H. VANDENBERG

Again in 1946, Senator Arthur H. Vandenberg, whom Secretary of State Byrnes called (Oct. 18) "the spokesman for the Republican party in foreign affairs," devoted himself primarily to international relations. As a delegate to the United Nations General Assembly and as an adviser to Byrnes at two meetings of the Council of Foreign Ministers and at the Allied Nations Peace Conference, Vandenberg contributed materially toward the establishment of world peace.

At the outset of his departure for the London session of the General Assembly in January, Senator Vandenberg reaffirmed his faith in the ultimate authority of that body as "the town meeting of the world." His fears over the Moscow agreement were allayed (Jan. 8) by Secretary Byrnes' assurances that the United States would not disclose atomic energy secrets until effective international control had been established. While in London he served on the Assembly's administrative and budgetary affairs committee, predicted (Jan. 23) early adoption of a world free press resolution, and opposed (Feb. 7) using a large area for the UN homesite.

Returning to the Senate on Feb. 21, Vandenberg reported (Feb. 27) to his colleagues that, despite unavoidable controversy, he was amazed that, at the Assembly's first session, "the areas of agreement were so vast and significant" and the accomplishments were so great. In his opinion the United States and the Soviet Union could live together in harmony if we would match Russian candor and firmness and would "assume a moral leadership which we have too frequently allowed to lapse." Later, he advocated (March 15) continuous sessions of the Security Council to enable prompt handling of difficulties.

With regard to atomic energy control, the Michigan Senator defended (March 19) the so-called "Vandenberg amendment" (for a military liaison board to advise and consult with the proposed civilian atomic energy commission) against widespread protest that it would result in military domination. He insisted to the contrary that final decisions would be made by the civilian commission unless they were overruled by the President, but he agreed (April 2) to a modified version of the amendment. The United States offer to give up atomic bomb secrets under proper conditions was, he maintained (Aug. 14), a "display of international good will and good faith beyond any remote precedent or parallel in the annals of the human race." Bernard Baruch's efforts to eliminate the veto on questions involving punishment of atomic control violators received (Dec. 28) his unqualified endorsement.

Senator Vandenberg disapproved (March 26) Churchill's proposal for a British-American military alliance and demanded (April 3) that General Draja Mihailovich of Yugoslavia be given a fair trial. The proposed $3,750,000,000 loan to Great Britain was supported by him (April 22) in the belief that American foreign trade would suffer severely and a "desperate battle for economic survival" would ensue if it were not granted.

Each time Vandenberg returned from the two Paris meetings of the Foreign Ministers Council he summarized and evaluated their results in the Senate. The most significant feature of the first meeting he found (May 21) to be the emergence of "a positive, constructive, peace-seeking, bi-partisan foreign policy for the United States." At the second parley, the main difficulty he observed was (July 16) the "mutual distrust and suspicion, which the 'iron curtain' between us and the insatiable Soviet appetite for proselyting and propaganda do not help dispel." He asked Soviet leaders to understand that, while Americans deeply respected the Russian people and were willing to cooperate with all nations, we were determined to end military aggression and would not "bargain in human rights and fundamental liberties anywhere on earth."

On July 18, President Truman named Vandenberg one of five delegates to the UN General Assembly session in New York City. At Byrnes' request he flew to Paris (Aug. 24) to serve as an adviser at the Peace Conference. Following Wallace's attack on United States foreign policy, Vandenberg issued (Sept. 14) a statement in Paris pleading for bi-partisan support of Byrnes' policy and warning that "we can only cooperate with one Secretary of State at a time." During the conference, Vandenberg spoke (Oct. 10) for free navigation on the Danube River and appealed (Oct. 14) for a reduction of $100,000,000 in the amount of Finnish reparations.

After his return to the United States the Michigan Senator reported (Oct. 19) to the nation by radio that the "world's supreme peace conundrum" was how to attain common ground "between Eastern communism and Western democracy." Further, he blamed the Soviet Union for not fully reciprocating American efforts to establish a true peace. In his capacity as delegate to the General Assembly meeting in New York, Vandenberg argued (Nov. 1) against assessing the United States nearly one half of the administrative costs of the United Nations on the ground that it might endanger the "sovereign equality" of the other nations in the organization. The budgets of all United Nations agencies, he urged (Nov. 12), should be brought under centralized control.

Senatorial duties and political affairs occupied much of Vandenberg's attention during the intervals between international conferences. Issues he voted for in the Senate included the $100,000,000 grant for school lunch purposes, a 60¢ an hour minimum wage in place of the proposed 65¢ rate, the emergency housing bill, the "Taft amendment" to the price control extension bill, and the proposed equal-rights-for-women constitutional amendment. On the other hand, he denounced (May 29) the labor-draft provisions of the President's emergency labor disputes bill as unnecessary, impractical, an invasion of personal liberties, and detrimental to Army morale. Although he supported extension of the selective service system, he insisted (June 5) that no man should be drafted unless the volunteering system produced a deficit. He suggested also (June 11) experimenting with price regulations by decontrolling one key industry as a "clinical demonstration."

Following his November re-election by a large majority for a fourth term, Senator Vandenberg was designated President *pro tempore* of the Senate and chairman of the Foreign Relations Committee for the 80th Congress, but he relinquished the chairmanship of the Republican Conference. On Dec. 17 he announced that, while he would willingly serve the administration in matters of foreign affairs if needed, he expected in the future to devote himself mainly to the Senate. When asked regarding his aspirations for the presidency, he declared: "I am not a candidate for the Presidential nomination."

MRS. FRANKLIN D. ROOSEVELT

In 1946, Mrs. Franklin D. Roosevelt, widow of the President, became one of the few women in American history to hold a major post in American foreign relations. As a delegate to the United Nations General Assembly meetings in London and New York, she contributed substantially to the deliberations and actions of that body. Moreover, through her newspaper column, extensive travels, and numerous addresses, she continued as in former years to command nationwide attention and respect.

At the London session of the General Assembly, Mrs. Roosevelt was named (Jan. 7) United States representative on the social, humanitarian and cultural committee, and she was instrumental in presenting an appeal to the General Assembly for a larger participation of women in its activities. To eliminate the language barrier between nations, she urged (Jan. 26) that children all over the world should be taught one internationally understood language as well as their own native tongue. She debated (Feb. 13) successfully against a Russian proposal to prohibit the distribution of "propaganda" against members of the United Nations in refugee camps.

After a two-day visit to Germany (Feb. 13-15), where she inspected displaced persons camps, toured Berlin, and advised American soldiers abroad against hasty marriages to European women, Mrs. Roosevelt flew back to the United States. In a series of addresses and interviews following her return, she made these observations: that the leadership so badly needed by Continental nations should be supplied by American youth (Feb. 19, 25); that, if we are to avoid another destructive war, the United States must help solve world problems by extending aid abroad and doing all possible to establish collective security (March 14); that our first objective must be to make the United Nations an organization belonging to the people (March 14); that chaos in Europe could not be averted by material aid alone (March 21); and that we could better understand Russia if we would recall the attitude of our forefathers on international affairs during the early history of our republic (April 5). One year after the death of President Roosevelt, she formally turned over (April 13) the family estate to the Federal Government for development as a national shrine.

At its first meeting in the United States, Mrs. Roosevelt was elected (April 29) by acclamation chairman of the Human Rights Commission of the United Nations Economic and Social Council. President Truman appointed her (July 18) to be one of the five United States delegates to the United Nations General Assembly meeting in New York beginning in September, then named her on Nov. 6 to serve a four-year term on the Human Rights Commission.

Several times Mrs. Roosevelt spoke out in the interest of harmony between the United States and the Soviet Union. Although she admitted that Russian tactics did not always please her, she insisted (May 30) that we must learn to get along with the Soviet. People who fear Russia forget that the United States is the most powerful nation in the world, she asserted (Oct. 8).

Nevertheless, Mrs. Roosevelt herself clashed in debate with Soviet delegates at various United Nations meetings, especially over the proposed constitution of the International Refugee Organization. Speaking (Nov. 8) to the General Assembly's social, humanitarian, and cultural committee, of which she was a member, and later addressing (Dec. 14) the entire General Assembly, Mrs. Roosevelt disputed Russia's contention that the IRO should not aid or resettle refugees who refused to return to their native lands. Likewise she challenged the Soviet delegate's use of the word democracy as "synonymous with Soviet" and the implication that nations not conforming to Russian ideas were "fascist."

Only a few of the large number of domestic issues on which Mrs. Roosevelt took a definite stand can be mentioned here. She opposed (June 1) the proposed equal-rights-for-women amendment to the United States Constitution, defended (Sept. 27) profits made by shipbuilders during the war, and criticized (Nov. 19) John L. Lewis' actions in the coal strike. As a keynoter of the New York State Democratic Convention, she declared (Sept. 2) that, while the Democratic party adhered to progressive ideas, the Republicans looked backwards and tended to block liberal reforms. After the convention she actively campaigned in the interests of her party candidates in the state election.

THOMAS E. DEWEY

Thomas E. Dewey's record as Governor of New York, his prominent place in the Republican party, and his overwhelming victory in a bitter contest for reelection, made him again in 1946 a leading national figure.

Indicative of Governor Dewey's policy were the following recommendations appearing (Jan. 9) in his annual message to the New York legislature: a large reduction in state taxes; state rent control legislation; pay increases for state employees; a billion dollar public works program; increased state aid for housing, education, and municipalities; and a bipartisan committee to study the advisability of a bonus for war veterans. Through several special messages, he later outlined in detail several features of his program, such as a $35,000,000 appropriation for emergency housing, streamlining of state welfare operations, the creation of a special commission to survey the need for a state university, a greatly enlarged public health system, and more rigid traffic safety controls.

Of the 1,327 bills passed by the New York legislature in 1946, Governor Dewey signed 1,002 and vetoed 325. Among the more important acts he approved were bills which reduced the state personal income tax 50 per cent, increased to 80 per cent the state's contribution for municipal relief costs, provided additional state funds for slum clearance and low-cost housing, established state rent control in case Federal regulation should end, authorized New York City to raise additional funds by new taxes, and provided additional educational, housing, and transportation facilities for veterans attending colleges.

Governor Dewey's interest in promoting education during 1946, characterized by his dramatic assertion (Jan. 11) that "civilization is a race between education and catastrophe," deserves special comment. Calling to Albany the heads of 85 New York State colleges and universities to consider emergency means of coping with enlarged school enrollments, the Governor told them (March 7) that a way had to be found to provide higher education for 75,000 or more veterans. From this meeting arose the joint sponsorship by the educational institutions and the state government of three new, temporary, two-year colleges, established on the sites of former army and navy bases. In the fall, Governor Dewey formally opened and dedicated all three of these new institutions: Champlain College at Plattsburg (Sept. 23), Mohawk College near Utica (Oct. 16), and Sampson College near Geneva (Oct. 23). In addition, Dewey approved (June 11) an emergency allocation for extra facilities at 11 established state colleges and universities, ordered (Oct. 10) a special survey of school finances to determine whether salary schedules needed revision, and denounced (Oct. 17) racial and religious bias in the admission of students to colleges and universities.

Temporary housing was another problem with which Dewey was greatly concerned in 1946. More than 30 emergency housing projects, providing over 7,500 dwelling units, received his approval. Several times he condemned Federal authorities for delaying the state housing program by withholding priorities for essential materials. Confronted in October with a "sit-down siege" of the Senate chamber at Albany by a group of veterans seeking funds for more housing, Dewey rejected (Oct. 20) a demand that he call a special legislative session for that purpose on the grounds that the state had already appropriated more money for housing than could be used in 1946 because of the limited available supplies.

On various occasions during the year Dewey made significant statements pertaining to foreign affairs. In his welcome to the United Nations, he assured the delegates (March 25) that both major political parties in the United States supported the "coalition for peace." Policies he advocated included admitting the new Italian Republic as a full partner to the United Nations (June 11), adopting a covenant to establish freedom of information and press throughout the world (Sept. 14), and immediate, large-scale immigration of Jews into Palestine (Oct. 7).

For three months before his renomination on Sept. 4 by the Republican State Convention, Governor Dewey set forth in frequent speeches throughout the state some of the ideas on which his formal campaign was later based. Predominant in these talks was the theme that the election would be primarily a contest between Republican concepts of true American liberty and freedom and Democratic beliefs in a controlled and regimented society. Time and again he asserted the need for economic and social freedom, for maximum opportunity for the individual, for equal rights of labor and business alike. As might be expected, he frequently reviewed the accomplishments of his administration, citing such points as the accumulation of a $500,000,000 surplus despite large tax and debt reductions and increased state aid for education, health, welfare, and other services. Other claims Dewey made were that, during his governorship, New York had the best record of any state in the Union for peaceful labor-management relations and that more progressive legislation had been adopted than during any prior 20-year period.

In his post-nomination campaign, Dewey relied mainly on his past record and made few promises for future action. The American Labor and Liberal parties' coalition with the Democrats and the policies of the national administration were frequent targets for his criticisms. Accusations by his opponent, Senator James M. Mead, that the state surplus fund was being used as a "political slush-fund" and that construction of a cross-state super-highway would delay home building were ridiculed (Oct. 15, 25) by the Governor. His closing declaration to the voters was that they must choose between "honesty and misrepresentation," between "inevitable confusion" and "sober, responsible, good government working in teamwork."

Dewey's upstate strength at the polls was so great that, despite his loss of New York City by nearly 200,000 votes, he won the election by more than 675,000 ballots, the third largest majority in New York history. After a three-week vacation with his family in Georgia, Governor Dewey attended (Dec. 2) a meeting at Miami of the executive committee of the National Conference of Governors. Shortly after returning to Albany he announced (Dec. 11) the likelihood of no increase in state taxes during 1947, although the budget would be substantially larger. As a result of a conference with Republican members of Congress from his state, the Governor reported (Dec. 18) that Charles A. Halleck of Indiana would be supported by the New York Congressmen for House majority leader. This evoked (Dec. 20) a demand by another candidate for the post, Representative Thomas Jenkins of Ohio, that presidential candidates should not interfere with the choice of House leaders. In the meantime, when Governor Dewey was asked if he was ready to announce his candidacy for President, he replied (Dec. 16), "Certainly not."

HENRY A. WALLACE

After more than nine years in the Cabinet and four years as Vice President, Henry A. Wallace left government service in September. As Secretary of Commerce during the first nine months of the year, Wallace advocated the following measures directly concerned with the nation's economic welfare: adoption by Congress of an "economic charter" pledging governmental action to assure equal opportunity for earning a living; establishment of machinery to coordinate the various governmental plans and functions affecting full production and full employment; approval of the St. Lawrence Waterway project; increased wages and salaries for "white collar" workers; broadening of the Social Security Act to give universal coverage to all population groups; Federal aid to promote the industrialization of undeveloped areas in the United States; and the maintenance of price controls.

In the June issue of the *American Magazine,* Wallace outlined various ways in which government could help avoid depressions by extending special services to small businesses. However, he complained (June 27) that adverse publicity had concealed the real progress made toward industrial conversion. At Mexico City, Wallace declared (Sept. 3) that the United States favored industrialization of the industrially backward nations. For labor, he asked (Dec. 26) a cost-of-living bonus coupled, if possible, with a guaranteed minimum annual wage.

In foreign affairs the Secretary of Commerce recommended (Feb. 8, May 27) the proposed British loan, but he disliked (April 28) what he termed Great Britain's policy of exploitation and interference in Palestine. The system of using secret agents to gather military information he denounced as "hellish." As in past years, he favored (July 25) expanding United States trade with Latin-America.

Wallace's outspoken criticism of United States foreign policy, especially as it pertained to the Soviet Union, led directly to his dismissal from the Cabinet. As early as March he had opposed a sterner attitude on our part toward Russia, and again in April he said there was no reason to fear war with Russia. In his major speech on Sept. 12, which President Truman said he had read and approved, Wallace opposed "get tough with Russia" tactics, demanded recognition of Russian domination in the affairs of Eastern Europe, and warned the United States not to bind its foreign policy to that of Great Britain. Since these ideas were contrary to Secretary of State Byrnes' policy, the President tried to quell talk that it constituted an official repudiation of Byrnes by stating (Sept. 14) that he had intended to approve only the right of Wallace to deliver the speech and not the speech itself.

Nevertheless, Wallace released for publication a letter he had written President Truman nearly two months earlier which maintained that our Russian policy was aggressive, dangerous, and should be modified. After a long conference at the White House, Wallace announced (Sept. 18) that he had promised to make no public statements or speeches until sessions of the Paris Peace Conference had ended, but only two days later the President asked him to resign from the Cabinet. In a brief radio speech Wallace then asserted that "winning the peace is more important than high public office" and that he intended "to carry on the fight for peace."

Wallace also was much concerned about the proper approach to the atomic energy control problem. He condemned (March 12) the "Vandenberg amendment" as a potential step toward "military fascism," and he claimed that if Congress passed a reactionary bill, "France will surely surpass us in the peacetime development of atomic energy." If we were to prevent atomic energy from destroying mankind, he declared (July 31), there must be a "profound change in the moral values and the thinking habits of the people the world over." Stemming from his letter of July 23 to the President, in which he criticized the United States atomic energy control plan, there ensued in September and October a rather bitter controversy between Wallace and Bernard Baruch.

Interest in Wallace's position in the Democratic Party was heightened by numerous statements he made during the year on political action and party politics. Claiming that the Democratic Party had flourished only when fighting for progressive measures, he predicted (Feb. 8) that when it ceased to be "the people's party" it would fittingly die. While he believed that there was need for political action independent of political parties, Wallace was very critical on several occasions of party members who broke the party line in voting on fundamental issues in Congress. Such members, he suggested, should be denied committee appointments and be deprived of patronage. Representatives and Senators from both parties immediately condemned this proposal, but Wallace said (April 10) it meant only "self-discipline" rather than a "purge" in party ranks, and he continued to attack the "recalcitrant minority" and "dissident members" of the Democratic Party. It was his opinion that the formation of a third party would only divide the ranks of progressives and assure their defeat, although he believed that the Democratic Party had lost some of its zest and needed a "rebirth."

When it was announced (Oct. 12) that he would edit the *New Republic,* Wallace said he would do what he could to arouse people to the "need of stopping this dangerous armament race."

HERBERT C. HOOVER

In the hope of helping to prevent world famine, former President Herbert C. Hoover returned to public service briefly in 1946. Appointed (March 1) honorary chairman of a new Famine Emergency Committee by President Truman, Hoover immediately appealed to the American people for a sizable reduction in their consumption and wastage of foodstuffs.

During a globe-circling flight the ex-President and his staff visited (March 17-May 10) most of the European and Asiatic nations to investigate food conditions and to discuss relief measures with governmental leaders. Before departing Hoover dramatically asked in a nationwide broadcast each American family to "take to your table an invisible guest" from a starving country. While in Paris, he stated (March 21) his opposition to a resumption of rationing in the United States because it would not be effective in time to meet the crisis. In France, Italy, and North Africa he found conditions to be "difficult but not intolerable," but he reported from Warsaw (March 30) that the plight of Poland was the worst seen by the mission in Europe.

Upon reaching London Hoover proposed (April 5) the establishment of a new and more effective international organization than UNRRA to mobilize the world's food resources. Great Britain he refused to classify as a "hungry country," while Belgium, Holland, and Denmark he considered to be in comparatively good shape. To avert widespread starvation in Greece, he suggested (April 17) the immediate diversion of 100,000 tons of cereals then en route from Canada to the United Kingdom.

After Hoover completed his inspection of Europe, President Truman asked him to report to the nation in person the facts about food. Instead he spoke (April 19) to the American people by radio from Cairo, grimly describing the desperate straits of most European countries, then continued his famine inspection travels to Asia. Immediate relief for India's stricken areas must come, he said (April 26), from Australia, Burma, Iraq, Java, and Siam, but the Philippine food problem could be easily solved, he suggested (April 29), by an exchange of surplus military vehicles for the rice of Siam and Indo-China. After visits to China, Korea, and Japan, Hoover declared (May 6) in Tokyo that famine conditions in the Far East could be substantially alleviated if Russia would release "part of the foodstuffs which it has secured in Manchuria."

On his arrival at San Francisco

(May 10), Hoover warned that if the coal strike continued and if the threatened railroad and shipping stoppages materialized "it will mean death to millions." In his report to President Truman he expressed (May 13) confidence that by "further vigorous conservation" and with better cooperation the supplies needed to prevent mass starvation could be obtained. Again he called upon Americans through a nationwide broadcast (May 17) for increased self-denial to help "dispel the hunger which hangs over the homes of more than 800,000 people."

At an emergency conference in Washington of the United Nations Food and Agricultural Organization, Hoover once more advocated (May 26) establishing a new international food agency to absorb by September all food activities of UNRRA. Because of its wastefulness and inefficiency, he opposed continuation of charitable distribution of food.

From May 25 to June 19 Hoover made a 15,000-mile air tour of 11 Latin-American countries to seek aid in combatting famine. While in Rio de Janeiro, he charged (June 15) that Communists in all countries were trying to "break down the provision of food for hungry people and thus produce chaos where they can fish in troubled waters." On his return he reported that the "excellent cooperation" of the Latin-American countries would result in large additional food exports. By June 28, the ex-President was able to declare categorically at Ottawa, Canada, that the "tragic gap" in minimum food supplies had been closed. However, as chairman of the Greek War Relief Association, he requested late in the year (Dec. 17) contributions of surplus food to relieve suffering in Greece.

Important pronouncements on other matters of national political interest were made in 1946 by Hoover. Claiming that the dominant issue facing the United States was "free men against the tide of Statism," he called upon the Republican Party (Feb. 12) to give the people an opportunity to choose freedom instead of the "world-wide reaction today toward economic serfdom."

ROBERT A. TAFT

Ohio's Senator Robert A. Taft, chairman of the Senate Republican Steering Committee, gained nationwide recognition in 1946 as a top-ranking leader of his party. The first of Taft's many attacks on the Administration during the year came Jan. 4, when he condemned President Truman's legislative program as superficial, ill-considered, and not acceptable to the public. His basic political philosophy was set forth in speeches at Kansas City (Feb. 12) and Dallas (Feb. 14), where he said that government must return to the principles of liberty, justice, and equality under the law, that delegation of unlimited discretionary authority to the President must cease, and that Federal power must be reduced and all possible control be left in the hands of the state and local governments.

Notwithstanding Senator Taft's primary concern with internal problems, some of his opinions on foreign relations are worth noting. In place of the proposed $3,750,000,000 loan to Great Britain, he suggested (April 24) an outright gift of $1,250,000,000. Criticizing the "disastrous effects" on wood producers of the reciprocal trade-agreement policy, he favored (July 29) a protective tariff for any industry "capable of producing two-thirds of domestic needs." He denounced (June 6, July 30) British refusal to admit 100,000 Jews to Palestine and the proposed partition of that nation into separate Arab and Jewish states. Because he believed that fundamental principles of law were violated by the death sentences imposed at Nuremberg on 11 Nazi war leaders, Taft deplored (Oct. 5) them as a "blot on the American record that we shall long regret."

As ranking minority member on the Senate Education and Labor Committee, Taft was very active in labor legislation. Fearing that the proposed minimum wage of 65¢ an hour would cause inflation and unemployment, he urged (March 21) adoption of a 55¢ an hour rate instead. The solution to the strike problem, he believed, was "to redress somewhat the excessive power given to labor unions in collective bargaining." Accordingly, he introduced (May 25) a series of amendments to the Case labor disputes bill designed to establish fact-finding commissions for public utilities, insure union responsibility on contracts, prohibit secondary boycotts, exempt supervisory employees from the National Labor Relations Act, prevent labor union "racketeering," and increase the power of the courts in labor disputes.

In Taft's opinion, President Truman's requested emergency labor legislation violated (May 25) "every principle of American jurisprudence"; he particularly objected (May 29) to the section authorizing the induction of strikers into the army. In the debate over the bill for the return of the USES to the states, Taft opposed (June 24) retention by the Federal Government of supervisory powers over state employment systems.

In line with his belief that the National Government had a responsibility to insure that "every family has a minimum standard of decent shelter," Senator Taft introduced (April 11), jointly with Senators Wagner and Ellender, a measure proving a long-range program to encourage private homebuilding and subsidize low-rent public housing projects. Despite his opposition to the feature of the Emergency Housing bill guaranteeing a market for pre-fabricated houses, he voted (April 10) for the bill on final passage.

Taft was a main participant in the Senate battle on subsidies and price control. He opposed (Feb. 27) continuation of subsidy payments on food and disputed (April 16) with OPA Director Bowles their inflationary effects. He advocated (June 11) continuing price and rent controls for a year, but gradual decontrolling of certain items to avoid rapid price increases; however, he insisted that identical standards be applied for the decontrol of agricultural and non-agricultural commodities. The Senate adopted (June 12) Taft's amendment to provide a production incentive by fixing manufacturers' prices at the level received in October, 1941, plus the average increase in costs in the industry making the product. He regarded (June 30) President Truman's veto of the price control bill, in which the President condemned the Taft amendment, as somewhat of a personal attack on him. Although he disapproved (July 12) a resolution to continue OPA without change for one year, he voted (July 24) for the substitute price control measure which was enacted into law.

In the fall, Senator Taft served (Sept. 11) as keynoter at the Ohio State Republican Convention and, not up for reelection himself, he delivered several important political addresses in support of other Republican candidates. After some hesitancy Taft decided in December to retain the headship of the Republican Steering Committee in the 80th Congress and to seek the chairmanship of the Labor Committee rather than that of the Finance Committee, either of which he would have been entitled to by seniority.

HAROLD E. STASSEN

Former Minnesota Governor Harold E. Stassen maintained a prominent place in national politics during 1946 by pursuing an extensive speaking schedule, by sponsoring the Republican Open Forums, and by announcing his candidacy in December for the 1948 Republican presidential nomination.

In a series of addresses during the early months of the year, Stassen set forth many of his ideas on national government and world affairs. Some of the more significant domestic policies he advocated were: a long-range, large-scale, Federal housing program; the elimination of unfair discrimination in employment; relatively high taxes during times of prosperity; a cooling-off period and fact-finding committees for labor disputes; no limitation on collective bargaining or the right to strike; and a general change in the price structure.

In the international field Stassen urged the United States to shape its foreign policy along the following lines: complete fulfillment of our United Nations commitments; unceasing efforts for an international police force, joint disarmament, and atomic energy control; acceptance of a trusteeship over captured Pacific islands; abandonment of unilateral action on international affairs; extension of large loans to England, France, Greece, and Russia; and formation of no alliances against other nations. For the United Nations, Stassen proposed (Jan. 18, 23) the establishment of an atomic air force for world police duty and the assumption of jurisdiction over disputes in Iran, Java, and Greece.

In declining to run for United States Senator, Stassen explained (March 14) that he wanted freedom to discuss public issues with people in all states and to learn first hand about the problems of other nations. On March 29, he announced the creation of the Republican Open Forums, with himself chairman of the advisory committee. These were to be channels through which party members could express their opinions on broad national and international questions to help formulate party policy.

In the spring Stassen continued to make numerous public appearances throughout the country. Racial and religious bigotry he attacked (April 5) as a menace to the freedom of every individual. He advised (April 12) the Republican Party to be "forthright, constructive, progressive, and dynamic." Features of the labor policy he advocated were provisions for extensive negotiations before strikes could occur, democratic control of and financial accountability for labor unions, and the settlement of jurisdictional disputes by a special tribunal. Because of their major responsibility for the slowness of national reconversion, he demanded (May 21) the removal from office of Commerce Secretary Wallace, Labor Secretary Schwellenbach, and Stabilization Director Bowles. At San Francisco, Stassen voiced a plea (May 29) for developing a concept of the "right to work" along with that of the "right to strike."

As keynoter at the Connecticut Republican State Convention, Stassen condemned (Sept. 9) both the domestic and foreign policies of the Administration. For worldwide control of atomic energy, he proposed (Sept. 10) that the United Nations appoint an outstanding board of scientists vested with inspection and supervisory powers not subject to the veto of any nation.

As early as Sept. 14 the Minnesota Republican Convention endorsed Stassen unanimously for President in 1948. On Nov. 15, Stassen admitted approving the issuance of a pamphlet proposing him for the presidency, but not until Dec. 17 did he formally announce his candidacy. Simultaneously, he said that his aim was "to move the Republican party along the path of true liberalism," especially in regard to labor laws.

THE YEAR IN CONGRESS

By Mary Sumner Benson
Assistant Professor, Milwaukee-Downer College

ORGANIZATION AND COMPOSITION

The second session of the Seventy-Ninth Congress convened on Jan. 14, 1946. There were 57 Democrats, 38 Republicans, and one Progressive in the Senate. In the House, 243 Democrats, 190 Republicans, one Progressive and one American-Laborite continued substantially the balance of the first session. The officers were those of the first session, Senator

Kenneth McKellar (Tenn.) as president pro tempore of the Senate and Sam Rayburn (Tex.) as Speaker of the House. The majority leader of the Senate was Senator Alben W. Barkley (Ky.). Serving as majority and minority leaders of the House were John W. McCormack (Mass.) and Joseph W. Martin, Jr. (Mass.).

GENERAL

Before Congress convened, President Truman made a radio address to the people in which he urged them to encourage their representatives to act speedily on a number of bills. In his combined State of the Union and Budget Message sent to Congress on Jan. 21, 1946 he stressed immediate action on five emergency measures, price control extension, Second War Powers extension, continuation of food subsidies beyond June 30, 1946, emergency and permanent housing legislation, and extension of the Selective Service Act beyond May 15, 1946. He also listed 21 other measures on which he thought action desirable. When Congress adjourned in August, approximately eight of these had been enacted into law but not all in the manner desired by the President. Many Administration measures were opposed by a coalition of southern Democrats and Republicans. The Case labor union bill and the first measure extending the Office of Price Administration were vetoed by President Truman, and several other acts were signed "reluctantly." It was generally considered that the year was not one of presidential and congressional cooperation in the field of domestic affairs. There was greater unanimity in foreign affairs.

COURSE OF LEGISLATION

Legislation moved slowly in the first part of 1946. Action in the Senate was delayed for three weeks by the filibuster against the Fair Employment Practices Committee. Committee work went on intensively in both houses. The House recessed from April 18 till April 30. The Senate continued in session to consider the loan to Great Britain. At this time, members desired adjournment by mid-July in order to campaign for the November elections. The next three months were of intense pressure. Strikes in April and May emphasized the need for labor legislation. The Selective Service Act was continued by a stop-gap measure only a few hours before its expiration on May 15. The Price Control Act reached the President only to be vetoed shortly before the expiration of the previous act. Several of the 1946-1947 appropriation acts were not completed before June 30, and in one or two instances payments for the new fiscal year were delayed. Important measures on which action was completed in the closing weeks of the session were the bill for domestic control of atomic energy, the loan to Great Britain, the Congressional reorganization bill and the modified price control measure.

The Congressional Reorganization Act, signed by President Truman on the last day of the session, was regarded as a long delayed and most promising reform which should expedite activities greatly in future Congresses.

Congress adjourned on Aug. 2, marking the first time in several years that sessions had not continued into December. The November elections showed that the incoming Congress would be of a different political cast.

AIRPORTS

A government program to increase the country's airports by 3,000 during the next seven years was undertaken. Federal expenditures of $500,000,000 between July 1, 1946 and July 1, 1952 were authorized, to help any state, municipality, or other local government agency desirous of building an airport and able to provide a share of the money. The Federal funds will be allocated among the states according to a formula based on population and area and will be handled by the Civil Aeronautics Administration.

APPOINTMENTS

Among the most controversial appointments of the year was that of Edwin C. Pauley to be Under-Secretary of the Navy. This was the subject of extended hearings before the Senate Naval Affairs Committee. There was much inquiry into Pauley's earlier connection with the oil industry, as well as the matter of contributions to the 1944 campaign fund by the oil industry and the matter of a Federal Government suit for title to offshore tideland oil in California. Secretary of the Interior Ickes opposed the confirmation of Pauley and openly disagreed with President Truman on the matter. The President's defense of Pauley led to the resignation of Secretary Ickes, effective Feb 15, 1946. A considerable number of witnesses gave testimony, which continued for some weeks. It finally became clear that a majority of the committee would not report favorably on the appointment. President Truman on March 13 withdrew the nomination at the request of Pauley, who stated that he believed he had completely answered the charges made, but he felt that under the circumstances he would not have the opportunity to render the Navy or the President the services they deserved. Subsequently John L. Sullivan was appointed to the post and confirmed by the Senate.

George E. Allen was confirmed by a voice vote for a two-year term on the board of directors of the Reconstruction Finance Corporation after an attempt on the floor of the Senate to send the nomination back to the committee for further study.

After the resignation of Chester Bowles as Price Administrator, Paul A. Porter of the Federal Communications Commission was unanimously approved for the post.

In June, Fred M. Vinson was nominated as Chief Justice of the United States. He was succeeded as Secretary of the Treasury by John W Snyder, who was confirmed without objection. The Senate confirmed Vinson as Chief Justice nine days later by a voice vote. Other notable appointments included Julius A. Krug as Secretary of the Interior, James E Webb as Director of the Budget, and Lieut. General Walter Bedell Smith as Ambassador to Russia. John R. Steelman was confirmed in June as Director of the Office of War Mobilization and Reconversion. Lieut. General E. B. Gregory became War Assets Administrator. W. Averell Harriman was named Ambassador to Great Britain.

Two new names were added to the list of United States representatives in the United Nations—John J. Winant as United States member of the Economic and Social Council and Senator Warren R. Austin who replaced Edward R. Stettinius on the Security Council.

APPROPRIATIONS

In his budget message at the beginning of the year, President Truman suggested expenditures of approximately $36,000,000,000 for 1946-1947. In a review of the budget issued as Congress adjourned he estimated the figure at $41,500,000,000 despite decreases of approximately $2,000,000,000 in some fields. Most of the increase was attributed to legislation passed during the session, of which major items were terminal leave pay, increased pay for military personnel, increased pensions and benefits for veterans, housing, pay increases in the Post-Office Department, funds for Philippine war damage and a loan to the Philippine Republic.

An act passed in February 1946 rescinded $51,786,811,921 in wartime appropriations and contractual obligations. This measure had been vetoed in December, 1945 because of the clause returning the U. S. Employment Service to the states. It was passed in substantially the same form without this clause. Another recession act in May nullified an additional $6,286,000,000 worth of war appropriations. Deficiency measures of more than $4,500,000,000 were passed during the year. A supplemental bill passed on the last day of the session appropriated an additional $2,636,289,000. This was primarily to cover the sums authorized in the provisions for terminal leave pay.

Some of the principal appropriation acts passed were:

Agriculture Department	$1,137,694,189
Interior Department	247,167,000
Labor Department and Federal Security Agency	1,155,015,670
Naval Appropriation	4,119,659,300
War Department and Military Establishment	7,263,542,400
War Department Civilian Appropriation	300,000,000*
Coast Guard	116,226,000
Independent Offices and Executive Office	5,000,000,000*
Legislative Branch	54,000,000*
Treasury and Post-Office	1,500,000,000*

* Approximate.

Nearly $2,000,000,000 was authorized in a Rivers and Harbors measure and a Flood Control bill, but the appropriations were to be made at a later date.

ARMED FORCES

A number of questions concerning the armed forces of the country arose during 1946. Among these was demobilization. In January, a special Senate Military Affairs Sub-committee undertook investigation of the whole problem. This followed demands for the reduction of our occupation forces and for immediate discharge of fathers. General Eisenhower gave an extended report to the committee on the Army's plans for demobilization. The subcommittee report favored acceleration of demobilization and made several specific suggestions to that end, asking that they be reviewed by the full committee in conference with General Eisenhower and others.

The matter of the draft was attacked on March 17, when a House group asked that a special joint Senate-House committee consider the size of armed forces needed for occupation commitments, voluntary enlistments, and the continuance of the draft. The President had asked that the draft be extended beyond the May 15 expiration date. Hearings were conducted by the Senate and House Military Affairs Committees separately, however. Testimony in favor of extension was given at committee hearings by Secretary of State Byrnes, Secretary of War Patterson, Secretary of the Navy Forrestal, General Eisenhower, and other prominent military leaders. General Eisenhower suggested indefinite continuation of the draft in the age-brackets of 18 to 26 years and limiting of service to 18 months. Secretary Forrestal felt that if the Selective Service Act were continued the Navy could obtain the numbers needed through its voluntary enlistment program but not otherwise. Secretary Byrnes stressed the need for continuance in the light of the international situation. Later Secretary Patterson indicated that the Administration would be satisfied with a one-year extension.

There were extended hearings and discussions and many suggestions of compromise were made. The measure as passed by the House extended the Selective Service Act for nine months from May 15, but forbade any inductions under the extended act until Oct. 15. Military pay was also increased. Eighteen and 19-year olds were exempted, as were fathers. The Senate framed a stiffer bill, but on May 9 passed a resolution extending the act as it stood for six weeks as a stop-gap. The House made changes in this also. On May 14, four hours before the expiration of the act, the President reluctantly signed a measure extending selective service to July 1 but banning the induction of fathers and of youths 18 and 19 years old.

Most of the Administration disapproved the bill but preferred it to the end of the draft. At the same time, the President appealed to Congress to pass a measure for a year's extension before July 1, in a form which would meet the nation's requirements. On June 5 the Senate sent to the House a measure extending the draft to May 15, 1947 and restoring the authority to conscript 18- and 19-year-olds. This went to conference with the House measure. Various difficulties occurred in the conference. On June 25 a bill was sent to President Truman which extended selective service to March 31, 1947 and excused 18-year-olds and fathers from conscription. Men from 19 to 44 were subject to induction. The size of the Army was fixed at 1,550,000 on July 1, 1946 and 1,070,000 a year later. Men might be discharged after 18 months of service, and service of new inductees was limited to that term. A companion bill provided service pay increases from 50 per cent for privates to ten per cent for the highest officers.

Continued from the previous session were discussions of plans for the unification of the Army and Navy. This had been strongly advocated by President Truman in 1945. A bill calling for a "Department of Common Defense," proposed by the Senate Military Affairs Committee in April, contained elaborate plans for a merger in accordance with the President's wishes. The measure was opposed by Secretary Forrestal before the Senate Naval Affairs Committee as placing too much power in the hands of a single individual. This opposition was shared by the heads of the Senate and House Naval Committees. In June, President Truman sent them a letter indicating the 12 basic principles on which the Army and Navy Departments were in agreement and urging speedy legislative action embodying these principles. No action, however, was completed before adjournment.

The size and strength of the Navy proved a debatable issue. Fleet Admiral Nimitz, Secretary Forrestal, and other officials of the Navy Department urged an increase of the enlisted personnel from 300,000 to 500,000 and an increase in commissioned personnel to 40,000. The President asked a budget of $3,725,000,000, to be increased to $4,225,000,000 by transfer from the Naval Central Procurement Fund. This would have been the Navy's largest peacetime budget. The Navy itself feared that this would be inadequate for the 500,000 enlisted men and 1,079 ships desired. The House finally passed a measure providing $4,139,718,000 in addition to the sum to be transferred. This apparently gave the Navy larger sums for research and public works but tied up some ships in the inactive reserve fleet. After some changes in the Senate, $4,119,659,300 was approved. In the appropriations "cut-backs" bill, signed in February 1946, $6,000,000 was made available for rebuilding Guam, a project to be carried out by the Navy.

The President asked $7,246,335,200 military appropriations for the War Department for the fiscal year 1946-1947. This was somewhat reduced by the House Appropriations Committee, but the fund for atomic energy was nearly doubled. When finally signed, the bill appropriated $7,263,542,400 and included funds for military relief and government in occupied countries.

On May 6 the President submitted to Congress a bill authorizing a program of military collaboration with other American countries, including the training, organization, and equipment of the armed forces of those countries. No action was completed.

Despite strong urging on the part of the Administration nothing was done about universal military training.

President Truman signed a bill authorizing the country to "stockpile" strategic and critical materials. He objected strongly to the "Buy American" provision of the act but felt that the national interest required that the Government have power to acquire "stockpiles" now.

The President vetoed a measure which provided for promotion of Navy, Marine Corps, and Coast Guard personnel who were prisoners of war, with retroactive increases of pay and allowances.

Minor bills passed included one for admission of fiancees of American servicemen regardless of immigration quota limitations. Some controversy arose over the bombing tests held by the Navy at Bikini and designed to test the efficacy of the atomic bomb. Questions were raised as to the international effect of the timing of the tests and the dangers of revealing the secret of the bomb. The measure was finally passed.

ATOMIC ENERGY

The discussions on national control of atomic energy begun in the first session of Congress continued throughout the 1946 session. After extended hearings, debates, and conference work a measure was sent to the President on July 26 and signed Aug. 1. Much of the discussion had centered about the matter of civilian or military control. The measure as passed created a five-man civilian control commission to exercise government monopoly over fissionable materials. Just below the control commission is a military liaison committee which is to be informed of every decision taken or contemplated by the commission. This committee has the right to appeal to the President against any action believed adverse to military security. In these cases, the President has the final word.

The bill creates a general manager and four technical divisions to work with the commission. The Government is given a virtual monopoly on inventions and patents in the atomic energy field. The civilian commission supervises the production of atomic weapons and has exclusive control over fissionable material used in the assembling of bombs. The director of the division of military application of atomic energy is to be a military man. The Army and Navy with the President's approval may assemble their own atomic weapons with material released to them by the commission. The commission has broad domestic powers but is forbidden to distribute fissionable materials to any foreign government or to any person for a use not under the jurisdiction of the United States. The death penalty may be exacted for dealing in the weapon or in its secrets with intent to injure the United States. The commission also has power to condemn private property essential to its purposes and to control patents on processes used in connection with fissionable material. The measure was regarded as one of exceptionally far reaching governmental control but one justified by the problems raised by atomic force.

CONGRESSIONAL AND ADMINISTRATIVE REORGANIZATION

"Streamlining" Congress had long been a matter of discussion. In 1945 a special joint Senate-House group of 12 members with Senator La Follette (Wis.) as chairman and Representative Monroney (Okla.) as vice-chairman was named to study the problem. After a year's study a report was made in March with 37 recommendations for change in organization and procedures, especially in committees. Committee consolidation, staffs of specialist experts, greater oversight of administrative agencies, and reorganization of the appropriations system were especially urged. The matter was vigorously debated in each house, and measures differing in various ways were passed. On July 26 the Senate accepted the House bill, which was enthusiastically signed by the President. The act increased Congressional salaries to $12,500 a year and added a $2,500 expense account not subject to income tax. It was provided that members of Congress over 62 years of age might retire on pension after six years of service by contributing to the Civil Service Retirement Fund. The number of committees was cut from 33 to 15 in the Senate and from 48 to 19 in the House, and it was provided that representatives should each serve on only one committee, senators on two.

Congressional lobbyists were required to register names, employers, and expenses. Closer Congressional control of finances was sought by provision for the drafting of a legislative budget early in each session by joint meetings of the appropriations committees of each house—the House Ways and Means Committee and the Senate Finance Committee. If estimated outlay went beyond expected receipts there would have to be an increase of the debt limit or an overall cut in appropriations. There was no enforcement provision for the legislative budget. Various minor provisions were designed chiefly to improve or expedite committee procedures.

Under authority of the Reorganization Act of 1945, President Truman recommended three governmental reorganization proposals. The one centralizing welfare activities in the

Federal Security Agency as a preliminary step to making it a new cabinet post and the one transferring a number of functions from one agency to another were accepted by the Senate although rejected by the House Acceptance by one house was sufficient to put the plans into effect. The remaining proposal, which would have unified all Federal housing activities in one agency, was defeated.

Salaries of Federal judges were increased by a flat raise of $5,000 a year

The State Department was authorized to reorganize the Foreign Service. Salaries of all career workers were increased. Those of ambassadors were raised from $17,500 to $25,000 Provision was made for establishment of a foreign service institute to serve as a post-graduate training school for foreign service officers. New standards for promotion were introduced, and the office of director general of the foreign service was created. Foreign service officers were required to spend at least three of their first 15 years of work in the United States and to take home leaves every two years while serving abroad.

The office of Under-Secretary of State for Economic Affairs was established. This was designed to be a two-year post to dispose of unusual post-war problems. After that, the position was to revert to that of Assistant Secretary.

An Administrative Procedure Act was the result of ten years of study and was endorsed by the American Bar Association. It provided for the dissemination of information concerning the organization and procedure of government agencies, gave detailed requirements for administrative hearings, and simplified judicial review of agency decisions.

Congress approved the continuance of the Reconstruction Finance Corporation to June 30, 1947.

DEBT LIMIT

Measures changing the debt limit were not new. In 1946, however, the public debt limit was reduced from $300,000,000,000 to $275.000.000,000 with the endorsement of the Treasury Department. This was hailed as marking the end of deficit financing.

THE LOAN TO GREAT BRITAIN

Perhaps the most important problem in legislation relating to foreign affairs, in both time spent in study and interest aroused, was the loan to Great Britain. President Truman sent a special message to Congress favoring the project on Jan. 30, 1946 and signed the bill approving the loan on July 15. Among those giving extended testimony in favor of the loan were Fred M. Vinson, then Secretary of the Treasury, Secretary Byrnes and William Clayton of the State Department, Secretary of Commerce Wallace, Winthrop Aldrich of the Chase National Bank and International Chamber of Commerce, and Eric Johnston, then president of the United States Chamber of Commerce. Principal opponents before the Senate Banking Committee were Hamilton Fish and "General" Jacob S. Coxey. There was a vigorous month-long fight on the Senate floor, but the measure was approved 46 to 34 on May 10. The House approved it on July 13 by a vote of 219 to 155. The loan extended $3,750,000,000 to Great Britain in the form of a credit which may be drawn on during a five-year period at an interest rate of 2 per cent. Britain in return agreed to abolish any exchange controls relating to United States exports to the United Kingdom, to abolish the "dollar pool," and to eliminate "sterling bloc" preferences.

On March 1 the President transmitted to Congress a report of the National Advisory Council on International Monetary and Financial Problems which not only endorsed the loan to Britain but declared that the British case was unique and would not constitute a precedent for other loans. The operations of the Export-Import Bank were explained and Congress was urged to increase the lending authority of the Bank by $1,250,000,000.

OTHER FOREIGN AFFAIRS

Both houses approved United States membership in the United Nations

Educational, Scientific and Cultural Organization. The House of Representatives passed the measure by a roll call vote of 264 to 41. A law was passed authorizing the State Department to use up to $20,000,000, derived from the sale of surplus property abroad, for a student exchange program and other educational activities with foreign countries.

On the last day of the session the Senate voted 60 to 2 to accept compulsory jurisdiction by the World Court for disputes among nations over treaties, international law, reparations, and breaches of international obligations. An amendment to the original measure provided that the final determination of whether disputes affecting the United States were international or domestic in character would be left to the United States. It was also voted that disputes arising under a multilateral treaty would not come under the International Court unless all parties to the treaty were also parties to the case before the Court or the United States specifically agreed to the jurisdiction where this Government was concerned.

Measures dealing with the Philippines might be regarded as either foreign or domestic, since the islands were recognized as independent on July 4. A trade bill gave the Philippines a preferential market in the United States for 28 years with the first eight years free of duty and the next 20 years with a gradual imposition of tariff. The bill also provided that United States citizens have equal property rights in the Philippines. A rehabilitation bill authorizing $520,000,000 for the Philippines and the transfer of $100,000,000 in surplus property was also passed. Later a $75,000,000 loan for the new republic was authorized, with a provision that interest be at least 2 per cent.

Despite presidential requests, funds for military assistance to China were not voted. A law was passed authorizing the transfer of 271 surplus small naval vessels to China by sale, lease, trade, or outright gift.

The Senate ratified a treaty on regulation of inter-American traffic which provided for reciprocal treatment of signatories as to registration and drivers' licenses. The Senate also ratified the treaty establishing the International Civil Aviation Organization. This made the United States the tenth official signatory. Twenty-six signatories are required to establish the organization on a permanent basis. The organization will administer internationally accepted rules for commercial flying, such as pilot certification.

Both houses manifested much concern for foreign affairs. The House received in February a long report on post-war economic policy and planning from its special committee under the chairmanship of Representative Colmer (Miss.). The report summarized economic conditions in each European country and was notable for its report of alleged Soviet control in eastern Europe. A subcommittee of the House Foreign Affairs Committee also reported on a trip to Europe and presented a detailed analysis of observations in Russia. In June the President sent Congress reports on lend-lease operations from March 11, 1941 to Dec. 31, 1945. This twenty-second report showed $49,096,000,000 in total aid between these dates. Conclusion of final settlements with several countries was also announced.

HOUSING

Little was accomplished in the way of long-range housing plans. On March 28 President Truman signed a measure authorizing the appropriation of $250,000,000 to provide at least 100,000 temporary housing units for war veterans and their families. This was the second of such temporary provisions, another having been included in the final deficiency bill of the previous session. It called for remodelling barracks and temporary wartime housing and for moving temporary housing no longer needed in industrial centers to college towns to meet shortages caused by enrollment of veterans under the G. I. Bill of Rights.

The Administration had requested an emergency housing bill designed to produce 2,700,000 new homes in two years. Payments of $600,000,000 in production premiums and authority to put price ceilings on existing buildings were asked as part of this program. Congress rejected both these requests. The Patman bill as finally passed provided $400,000,000 to encourage production of scarce materials, increased by $1,000,000,000 the Government's authority to insure home mortgage loans, continued priorities and allocation authority to Dec. 31, 1947, gave preference to veterans in purchase or rental of new homes, permitted price ceilings on new houses, and gave broad authority to the Housing Expediter in issuing orders to other government agencies and controlling the export of lumber.

President Truman's reorganization plan for unifying all Federal housing activities in one agency was not accepted. Much interest was shown in the Wagner-Ellender-Taft long-range housing bill, which was passed by the Senate. Action on it was not completed in the House despite special presidential urging late in July. After adjournment there was some popular demand for a special session to complete action on the bill, but nothing came of it. The bill would have merged 16 bureaus dealing with housing problems into a National Housing Agency, helped to finance public low-rent housing projects in cities by a Federal contribution not to exceed $88,000,000 annually, made loans on land development for slum clearance, aided rural home building, and assisted prospective home buyers by more liberal insurance provisions. It involved a ten-year plan.

INVESTIGATIONS

Investigations into many phases of national activity were pursued extensively by regular and special committees. The work of the Joint Committee on Pearl Harbor and of the Senate Special National Defense Investigating Committee is noted under separate headings.

The House Committee on Un-American Activities, made a standing committee in 1945, went into many problems. In May 1946, the House showed its confidence in the group by voting it an additional appropriation of $75,000 for its work by a vote of 240 to 81. The funds were not voted without vigorous discussion. A report issued in June dealt chiefly with the Joint Anti-Fascist Refugee Committee of New York and the Communist movement and criticized sharply one phase of the War Department's indoctrination course for American soldiers. In October further hearings were held on Communistic activity. Much publicity was given to a meeting at which Chairman Rankin was the only committee member present in which he differed sharply with Dr. Harlow Shapley of Harvard on the method of procedure.

The House Committee on Campaign Expenditures was active throughout the fall. It conducted an inquiry into the work of the CIO Political Action Committee and the National Citizens' Political Action Committee and held hearings on American Action, Inc. of Chicago. No final report on this was issued. As the year ended, the committee was recommending that the new Congress continue an inquiry into the re-election of Representative Vito Marcantonio of New York.

The Senate Campaign Expenditures Committee was also active. In October it dismissed charges of excessive spending and other irregularities in the renomination of Senator Kenneth McKellar (Tenn.) on the ground that they were not supported. Perhaps the committee's most spectacular investigation was that into the re-election of Senator Theodore G. Bilbo of Mississippi and the charges that Negroes were prevented from voting in the election. No final report was issued before the close of 1946. The committee also investigated the senatorial elections in Maryland.

Of interest among the many war construction and contract investigations was the report of the House Roads Committee that the Alcan Highway had been constructed as economically as could be expected and that there was no evidence of irregularity.

LABOR

The strikes and other labor restlessness of the post-war period raised the problem of legislation in this field. President Truman especially favored the passage of a bill authorizing the establishment of fact-finding groups in industrial disputes which would prevent strikes during the period of the fact-finding process. Congress in general was inclined to stronger action. A strike control bill (Case bill) was brought up in the House early in the session. The measure was reported by the Rules Committee rather than the Labor Committee and was hotly debated. It was generally regarded as a substitute for the fact-finding bill favored by President Truman. The bill passed the House 258 to 155 on Feb. 7, 1946. It provided for mediation, voluntary arbitration, civil suits for breach of contract and Federal court orders to enjoin violent picketing and enforce cooling-off periods. Amendments proposed in the Senate Labor Committee would have rendered the measure far less stringent. Then came the coal strike. The Senate hastily called the bill up and a series of amendments to strengthen the bill were proposed from the floor.

The coming of the railroad strike led President Truman to propose an emergency strike control bill but the Senate first voted 49 to 29 for its stronger version of the Case bill. The measure included as a whole the Hobbs Anti-Racketeering bill passed earlier by the House. The House approved the measure with the Senate amendments four days later 230 to 106. It was vetoed by the President, whose veto was sustained in the House. President Truman stated that the bill would tend to increase rather than decrease strikes and was otherwise objectionable. He recommended that a joint committee be appointed to study the entire problem for six months.

On May 25, the President had suggested an emergency strike control bill which would have given him power to draft strikers into industries taken over by the Government and to transfer all profits of strike-bound plants under government control to the Treasury Department. The House voted the measure within two hours of its introduction by a vote of 306 to 13. This was to be a temporary measure. In the Senate it was stripped of the essential labor draft and otherwise weakened. No final action was taken. The provisions of the Hobbs Anti-Racketeering bill, passed by the House in December, 1945 had been included in the vetoed Case bill. Then in June, after the veto, the measure as a whole was brought up and speedily passed by the Senate. The bill made it a felony under Federal law to interfere by "robbery or extortion" or by threats of violence with the movement of goods in interstate commerce. Heavy penalties were provided for violation. The President signed it on July 3 with a statement that the act did not deny to unions their rights in carrying out their legitimate objectives.

A measure, later called into question before the courts, was the "Petrillo" bill. This prohibited "coercive practices" interfering with the broadcast of records and transcriptions, or with purely educational and cultural programs, or with programs originating outside the United States. It also forbade coercion to require radio stations to employ in broadcasting persons in excess of the number the station needed.

Attached to the Agriculture Department appropriation bill was a provision forbidding payment of salary to any worker belonging to an organization which claimed the right to strike against the Government. Another rider to the appropriation for the Department of Labor and the Federal Security Agency provided that standards for agricultural workers should be those defined in the Fair Labor Standards Act rather than the Social Security Act. Workers protested that this withdrew nearly 1,000,000 agricultural workers from the protection of the National Labor Relations Law. President Truman hesitated somewhat over signing the act, but did so on July 26. This created a delay in the issuance of the first half month's pay check to employees by these agencies.

"Full Employment" had been much discussed during 1945. The Senate and House had passed different measures before adjournment. A compromise bill, the Employment bill of 1946, was signed in February. It provided a council of three economic advisers to the President to assist in the preparation of periodic economic reports to Congress. These reports and others were to be studied by a Joint Committee on the Economic Report composed of seven members from each house who would then devise ways of implementing the recommendations.

Proposals for a permanent Fair Employment Practices Commission were among business left over from 1945. The FEPC was brought up in the Senate on Jan. 17, 1946. This resulted in a filibuster conducted chiefly by southern Democrats. Attempts to invoke closure were not successful. and the FEPC bill was removed from its place as unfinished business on Feb. 9 and was not taken up again.

In December 1945 President Truman had vetoed a bill cutting back $50,000,000,000 of appropriations because it contained a clause calling for return of the United States Employment Service to the states within 100 days. This led to a separate measure dealing with the USES. The House passed a bill ordering its return by June 30, 1946. The Senate voted its return by Dec. 31, 1946. In a final compromise the office was voted returned to the states in November.

SOCIAL SECURITY

Various proposals were made for changes in the Social Security Act. There was general agreement on the provision freezing the Social Security payroll tax at one per cent for 1947. Other phases of the measure were more controversial, but a compromise bill was worked out by Senate and House conferees on Aug. 1 and approved the following day by both houses. It provided bonus social security payments to all states alike of $5 a month for each aged or blind person on the state rolls and $3 for each dependent child. There had been an effort to make proportionally larger grants to the poorer states. The bill also doubled Federal expenditures for maternal and child welfare and took maritime workers into the unemployment compensation system.

Railroad workers were given larger old-age insurance benefits. The number of workers covered by the act was extended. Survivor, disability, and sickness benefits were added to the original act.

Proposals by the Administration to increase the legal minimum wage to 65 cents an hour in 1946 and 70 cents by 1950 were brought up in the Senate. The measure was tied to one increasing farm parity prices by including all farm labor costs in the computation of such prices on major agricultural commodities. The President warned the Senate that he would veto the bill with such a provision. Nevertheless the Senate passed the bill by a voice vote. It was not acted on by the House.

Pay of over 1,000,000 civil service employees of the Federal Government was increased by 14 per cent or $250, whichever was greater. There were some exceptions to the general rule. No salaries covered by the act were to exceed $10,000 a year, and persons in the lower brackets might have a maximum increase of 25 per cent. The bill provided that 75 per cent of the increase must be absorbed by a reduction in personnel.

In the closing week of the session the President recommended to the consideration of Congress the proposals of the International Labor Office for the establishment of minimum working and living conditions in non-self-governing territories.

OIL TIDELANDS

The problem of title to oil tidelands arose in Congressional hearings early in the year. On July 22 the Senate voted 44 to 34 to give the states clear title to oil-rich tidelands extending three miles or more into the ocean.

The measure was opposed by Majority Leader Barkley. According to the Senate Judiciary Committee, U. S. Supreme Court decisions had upheld the rights of the states over such lands but measures introduced in Congress and claims by the Department of the Interior had cast doubt on them. The Interior and Justice Departments opposed the measure partly because a suit to determine title to such lands was before the Supreme Court. The House agreed to the bill, which was vetoed by President Truman on Aug. 1. He alleged that Congress had invaded the jurisdiction of the Supreme Court and that the matter should be left to judicial decision. The House voted to sustain the President's veto.

PEARL HARBOR

The inquiry into the Pearl Harbor disaster by a special Congressional investigating committee, begun on Nov. 15, 1945, had been extended to Feb. 15, 1946 before the first session of Congress adjourned. Hearings continued between sessions and after the convening of Congress. Admiral Harold R. Stark, Rear Admiral Husband E. Kimmel, and Major General Walter C. Short were questioned at length. Copies of a report to the late President Roosevelt by Frank Knox, former Secretary of the Navy, were introduced. Former Supreme Court Justice Owen J. Roberts stated that the version of this report issued by President Roosevelt was complete. Many other witnesses were called. The chief point of interest was the supposed "winds" message. The testimony left it uncertain whether there was such a meassage and if so what its significance may have been.

On Feb. 15 the life of the committee was extended to June 1 with the understanding that formal hearings end on Feb. 20. At the time that these hearings closed it was estimated that the record amounted to 15,000 pages in addition to documents. The personal memorandum of former Secretary of War Henry L. Stimson was given to the committee. Questions submitted to Stimson and to former Secretary of State Cordell Hull were answered in writing. Hearings were resumed by the committee in April. On May 23 the records were formally closed but were reopened briefly on May 31. At that time a new deadline, July 10, was set for the report.

The report was finally made public on July 20. The committee found by a majority of eight to two that President Roosevelt was blameless for the disaster. It asserted that the greatest responsibility lay with the Army and Navy commanders in Hawaii but that their failures were errors of judgment, not derelictions of duty. The War and Navy Departments were described as "not sufficiently alerted." The ultimate responsibility was placed upon Japan for her unprovoked act of aggression. The report recommended the unification of command at all outposts and the complete integration of Army and Navy intelligence agencies. It also gave a long list of supervisory and administrative principles for the consideration of the War and Navy Departments.

A report filed by the minority of two dissented from most of the majority points and placed the chief responsibility on eight men—President Roosevelt, Secretary of War Stimson, Secretary of the Navy Knox, General Marshall, Chief of Staff, and several others.

These reports were believed to mark the end of inquiry into the subject.

PRICE CONTROL

Price control was a much debated subject. The Office of Price Administration and the Civilian Production Administration received much criticism from some of the witnesses who appeared before various committees. In March, the House Special Committee on Post-War Economic Policy and Planning recommended, though with reluctance, that the program, somewhat liberalized, be continued till June 30, 1947. This recommendation was included with others, such as maintenance of Federal income tax rates, curtailment of Federal expenditures and continuance of control over consumer credit, as anti-inflationary measures.

Bernard Baruch, appearing before the House Banking and Currency Committee, urged continuation of OPA for a year. The House in late April amended the proposed Price Control Extension Act so far that members of the Administration described the bill as virtually repealing price control. The measure, which gave a nine months' extension in a modified form, was passed by a vote of 355 to 42, despite protest by a large number of organizations which viewed the act as inflationary. Testimony urging the continuance of positive controls was given before the Senate Banking and Currency Committee by the National Grange, the American Farm Bureau, and the National Farmers' Union, although they differed on retention of subsidies. Lumber and dairy producers urged the lessening of controls, as did cotton manufacturers. President Truman announced that he would veto the bill in the form passed by the House and urged a stronger bill on the Senate. After two months the Senate Banking and Currency Committee reported out a measure viewed by the Administration with even greater disfavor than the House version. This was passed on June 13 with additional amendments from the floor and the House and Senate measures were sent to conference. A compromise bill passed the House on June 25 and the Senate on June 28. The old law was to expire at midnight June 30.

The compromise bill, opposed both by those who wished no control at all and by those who wanted stronger controls, would have extended the OPA for one year, but shifted authority over prices of farm products to the Secretary of Agriculture. It would have created a "decontrol" board with authority to overrule refusals by the price administrator or Secretary of Agriculture of requests to remove ceilings. Price ceilings on any product would be based on the 1941 price plus increased production costs since that time. Consumer food subsidies were limited to $869,000,000 and, except for sugar, were scheduled to end on May 1, 1947. The bill contained a number of other modifications. Chester Bowles resigned as Stabilization Director immediately after the passage of the bill and urged the President to veto it, as it made effective control of prices and rents impossible. Senator Barkley, majority leader, and others wished the President to sign it to prevent the end of all control. On June 29 President Truman vetoed the bill and appealed to the public by radio to influence Congress to retain the controls and prevent inflation. The House sustained the veto.

The President contended that the vetoed measure would have proved inflationary in its effect through price increases and uncertainties, higher wage demands and higher production costs. He suggested extension of the law for a year, the continuance of food subsidies to avoid serious price increases and to permit orderly termination of subsidies, and plans for the removal of most price controls and subsidies during the coming year.

The country was thus left temporarily without price control. The House passed a temporary resolution on July 1 extending price control to July 20, presumably while an extension act was being prepared. The Senate, however, did not concur in this action but began work on another compromise bill, to which many amendments were proposed. This was offered as a substitute for the House resolution and the two measures were sent to conference. The resultant bill was passed by both houses and was signed by the President on July 25. He repeated that the measure fell short of his hope but signed it as the best likely to be passed and as a better bill than the one vetoed June 29.

The bill extended OPA till June 30, 1947 and restored rent and price ceilings and other orders in effect June 30, except for ceilings on meat, poultry, eggs, dairy products, grain and feed, soybeans, cottonseed, petroleum and its products, and tobacco and its products. Livestock, milk, cotton, and soybeans would be subject to controls after Aug. 20 unless the decontrol board exempted them beyond that date. It created a three-man decontrol board with extensive powers of decontrol and under some conditions recontrol which would assume much of OPA's former authority. The OPA was required to raise many ceilings within 60 days. The act established a new formula under which ceilings on many manufactured goods must be increased. Ceilings were to reflect 1940 average industry-wide prices on each product, plus cost increases which had occurred since that time. Ceilings were to be lifted from any item whose current supply equalled demand, and non-essential commodities were to be decontrolled by Dec. 31. On July 27 the President named, as members of the Decontrol Board, Roy L. Thompson, Daniel W. Bell, and George Mead. The Senate confirmed the appointments without debate two days later.

SILVER

The price of government-owned silver caused a deadlock between the two houses for a time. A measure was finally passed permitting the sale of silver to industry at 90.5 cents an ounce. The Treasury was also authorized to purchase silver at this price if the silver had been mined within a year of the time that it was offered for sale.

VETERANS

Congress displayed great interest in the welfare of veterans. It was estimated that over $10,000,000,000, or nearly one-third of all appropriations for the fiscal year 1946-1947, went to veterans' services or programs; $7,393,966,415 was appropriated for the Veterans Administration; $2,431,708,000 more was designated for terminal leave payments to enlisted men. Programs for relief of the veterans' housing shortage accounted for $328,784,000. There were some other appropriations for construction of veterans' hospitals and building material subsidies.

In May, President Truman signed the Veterans Priority Bill. This gave honorably discharged service men second claim after the Federal Government on surplus property and first claim on a special group of items to be set aside by the War Assets Administration.

War service insurance provisions for GI's and veterans were liberalized to permit lump sum payments, restrictions on the naming of beneficiaries were removed, total disability coverage was added, and a flexible system of conversion from military to civilian type insurance was introduced.

A law amending existing statutes gave American citizenship to children born overseas to American soldiers and foreign wives provided the American parent had lived in the United States for five years after his twelfth birthday.

A bill was passed in July providing additional temporary facilities for colleges with unprecedented enrollments. The act authorized the Federal Works Administration to take over surplus war structures and facilities and to transport and convert them into educational facilities for institutions furnishing courses to veterans; $75,000,000 was provided for this purpose in the third deficiency bill.

A 20 per cent increase in pension and compensation payments was granted to veterans of both world wars and their dependents. Full compensation was authorized for six months for veterans who are receiving hospital treatment or institutional care through the Veterans Administration. Increases were granted to certain groups of disabled Spanish-American war veterans, and an increase was made in the rate of pensions of members of the Regular Army, Navy, Marine Corps, and Coast Guard who become disabled through other than war service.

Terminal leave pay for veterans proved a somewhat complex problem. The House passed a bill providing for cash payment. In the Senate Military Affairs Committee it was voted to make the payments largely in five-year interest-bearing government bonds, in order to avoid inflationary effects. The American Legion, the Veterans of Foreign Wars of the United States, and the Disabled American Veterans approved the payment by bond. The Senate voted the measure with this provision, and the bill was sent to conference. It was agreed that payment would be made largely in bonds which would be negotiable for use as premium payments on government life insurance or national life insurance or in converting one to the other or in payment of a policy loan on such insurance made prior to July 31, 1946. The bonds would draw interest at 2½ per cent and collect face value at maturity. Payment was to be on the basis of accrued unused leave at the rate of two and one half days for each month of active service after Sept. 8, 1939 at the rate of pay on discharge plus subsistence allowances. Payments were to be made in cash when the amount due was less than $50 and in certain other instances. The bond plan applied to officers, who had previously been paid in cash.

Terminal leave pay for enlisted men was new. President Truman asked that $2,679,493,000 be appropriated as terminal leave pay for enlisted service men and women discharged before Sept. 1, 1946. The final deficiency bill of the session included $2,413,000,000 for this purpose. It was estimated that 15,000,000 veterans would be entitled to benefits. The same deficiency appropriation included $30,000,000 for the purchase of specially equipped automobiles for veteran amputees. This would provide equipment for some 20,000 disabled veterans at a cost not to exceed $1,600 each.

WAR INVESTIGATING COMMITTEE

The Special Senate Committee Investigating National Defense, popularly known as the Mead and later as the Kilgore Committee, was very active. Early in the year it probed the disposal of war surpluses. In a report issued March 22, 1946 the committee criticized the "dilatory policies" of the Army and Navy in making surpluses available overseas and the failure of the State Department to create better conditions abroad for such sales. It was suggested that future sales of surplus armaments to other countries be made subject to Congressional authorization. The report was especially critical of the terms of transfer of surplus military property to Great Britain. In August the committee called for additional reports to Congress on the sale of surplus property abroad.

War contracts were also a special subject of study. Long hearings were held on the Garsson munitions combine which was alleged to have profiteered. Questions were raised about defective mortar shells which caused casualties among the users. A War Department report later cleared the firm on this point. Study was also made of the connection of Representative Andrew J. May (Ky.), chairman of the House Military Affairs Committee, with the Garsson contracts. Controller-General Lindsay C. Warren in testimony before the committee attacked the War Department's procedure with war contractors. President Truman issued an executive order permitting the committee to examine income, excess profits, and other tax returns in order to facilitate its work. The committee also examined Representative John M. Coffee (Wash.) as to a payment received in 1941 which he stated was a campaign contribution but which was alleged to have been payment for services rendered in connection with war contracts.

The committee probed also into the Canol project, the oil developand pipeline in Canada and the Yukon. Members were insistent on access to Army and Navy documents on the subject. President Truman finally "declassified" the files, making them available to the committee. The committee had attacked the project as a waste persisted in by the Joint Chiefs of Staff despite protests by the Secretary of the Navy, the Budget Director, and the committee itself. It was explained, although not in detail before the committee, that the project was kept up for reasons of strategy, not procurement. The committee also studied the reasons for the construction of the Inter-American highway.

Many of these studies went on after Congress had adjourned. As the year ended, the committee was conducting a detailed investigation into the alleged relations of Senator Theodore G. Bilbo (Miss.) with war contractors. This dealt primarily with "campaign contributions" in 1942. Investigators were sent to Mississippi. The early hearings were held in executive session. Public hearings began in Washington on Dec. 12. About 30 witnesses were summoned. The meetings of the subcommittee which heard testimony were marked by some disturbance and acrimony. Senator Bilbo himself took the stand. Another prominent witness was Edward P. Terry, former private secretary to Bilbo. On December 31 the War Investigating Committee made its report. This charged that Senator Bilbo had received gifts, services and political contributions in return for his aid to certain war contractors and that by these transactions he had "misused his high office and violated certain Federal Statutes." The report was signed by two Democrats and four Republicans. One Democratic member of the committee disapproved the report and two others refrained from signing it on the ground that they had heard little of the testimony. The report led to a movement to keep Bilbo from taking his seat in the Eightieth Congress. A two-day filibuster threatened to block Senate organization. The dilemma was resolved temporarily by permitting Bilbo to return south for a serious operation and to draw salary during his absence, and postponing the question of his taking the oath of office until his recovery.

WAR POWERS

An amended version of the Second War Powers Act renewed the authority of the President to ration and allocate scarce materials, to requisition property, and to give priorities. These powers were extended for one year. A specific provision forbade use of the authority as a means of fixing price ceilings on commodities or rents.

Government agencies were empowered to settle claims of war contractors for losses incurred through no fault of their own between Sept. 16, 1940 and Aug. 14, 1945. The President was authorized to make regulations for settlement. Another act gave original owners the right to reacquire real property, such as hotels, taken by the Government during the war.

WAR SURPLUS

A compromise measure passed in February 1946 authorized sale or charter of $17,000,000,000 worth of surplus ships from the merchant fleet. Minimum prices were fixed at 31½ per cent of cost on Liberty Ships, 35 per cent for all other dry-cargo ships, and 50 per cent for tankers. The maximum for dry-cargo vessels was set at 50 per cent of pre-war domestic cost, for tankers at 87½ per cent. Citizens of the United States and the Philippines were given first chance to obtain the vessels with a provision for sale to foreigners if no offers were received from American citizens.

The House Appropriations Committee, in reporting a deficiency bill, announced that the War Assets Administration expected to dispose of $15,400,000,000 worth of goods and property in the United States for a probable return of $2,900,000 and the Office of the Foreign Liquidation Commission of $3,000,000,000 worth of surplus holdings abroad for approximately $600,000,000 in the fiscal year 1946-1947. The committee praised the efforts of the War Assets Administration but urged a vigorous sales drive to dispose of war surpluses quickly.

The House named a Surplus Property Investigation Committee which held extended sessions in the fall after Congress had adjourned. A report filed with the House Clerk on Sept. 29 accused the War Assets Administration of being careless and confused and urged an inventory of the surplus stocks. The internal administration of the WAA was also criticized. The investigations continued beyond this date with inquiry into many individual transactions.

MISCELLANEOUS

The program of Federal aid to the states for school luncheons was placed on a permanent basis. Federal grants of a "temporary" nature had been made for this purpose for more than ten years.

The domestic rate on air mail was reduced from eight to five cents an ounce. This law became effective on Oct. 1.

A bill to provide a cancer control program was rejected in the House on the grounds that it would not accomplish the goal sought. A particularly controversial measure, the National Health Bill, was still in committee in each house when the session ended. The measure would have established a national social insurance system on a very comprehensive basis, authorized a ten-year program of Federal aid for hospitals and health centers, extended the social insurance system to farmers, domestic workers, and other groups, and provided for a national system of public employment offices. The bill had the backing of the Administration and was the subject of much study in committee.

A bill for a national science foundation under a single administrator passed the Senate but action was not completed on it in the House. The foundation was planned to coordinate and encourage scientific research.

The Anti-Poll-Tax bill was brought before the Senate but discussion was ended after a motion for closure of debate failed to obtain the necessary two-thirds vote.

THE SUPREME COURT AND CONSTITUTIONAL LAW

By Robert E. Cushman
Professor, Cornell University

GENERAL

Chief Justice Harlan F. Stone died April 22, 1946. He was appointed Associate Justice by President Coolidge in 1925, and was elevated to the Chief Justiceship by President F. D. Roosevelt upon the retirement of Chief Justice Charles E. Hughes in 1941. On June 7, President Truman nominated Frederick Moore Vinson, then Secretary of the Treasury, to be Chief Justice of the United States, and the Senate confirmed the nomination on June 20. Mr. Justice James C. McReynolds, who retired from the Court in 1941, died Aug. 24. Mr. Justice Robert H. Jackson, who had been appointed, in May 1945, chief American prosecutor at the trial of Axis war criminals at Nuremberg did not return to the Court until October, 1946. On June 10 Mr. Justice Jackson in Nuremberg released to the press a statement sharply criticizing Mr. Justice Hugo L. Black for his failure to disqualify himself in *Jewell Ridge Coal Corp. v. Local No. 6167, U.M.W.*, 326 U. S. 161 (1945). This case, which awarded coal miners "portal-to-portal" pay under the Fair Labor Standards Act, was decided by a five-to-four vote, and Mr. Justice Black's former law partner was attorney for the union. The statement, unprecedented in judicial history, made public record of a personal antagonism between the two justices, and elicited nationwide press comment. Mr. Justice Black made no reply, and there have been no later repercussions of the incident.

During the year the Court decided 64 cases in which no dissents were filed. In two cases, four justices dissented, and in 29 cases three dissented. The Court overruled one earlier case. This brings the list of overruled decisions since 1937 to 27.

TRENDS AND GROUPING

The decisions of the Court fell roughly into five groups. First, the war brought cases dealing with the validity of martial rule in Hawaii, and the procedural soundness of the military trials of Japanese Generals Yamashita and Homma. Second, a substantial number of cases raised civil liberty issues both on the Federal and state level. Here belong the cases involving the postal censorship affecting *Esquire Magazine,* the right of Congress to deny salary to Federal employees alleged to be subversive, the granting of naturalization to those unwilling to bear arms, and certain phases of religious liberty and freedom of the press. Third, a group of cases presented important questions to the Court which, on the ground that they were "political" in nature, the Court declined to answer. The most important of these involved an attempt to secure the invalidating of the present inequitable Congressional districting of the State of Illinois. Fourth, problems of Federal-state relations were presented by the Federal taxation of the state sale of mineral waters, the application of O.P.A. price controls to sales made by states and counties, and a varied list of state taxes and police regulations applied either to the Federal Government itself or to interstate commerce. Notable here is the case holding that racial segregation on interstate buses invalidly obstructs interstate commerce. Finally, important decisions, which involved no constitutional issues, construed the Federal Fair Labor Standards Act. Of these the most important was the "portal-to-portal" pay case which set the stage for the suits later brought by labor unions to recover billions of dollars by the same method. The trends most clearly discernible are the fairly consistent protection accorded to civil liberties, the generous treatment accorded to labor, and the adherence to the doctrine of the supremacy of Federal law and interests when these were brought into conflict with state law.

MARTIAL RULE IN HAWAII

Martial rule was established in the Territory of Hawaii on the day of the attack on Pearl Harbor, continued until ended by Presidential Proclamation in October, 1944, and was held by the Supreme Court to have been invalid in *Duncan v. Kahanamoku* (with which was combined *White v. Steer*) in February, 1946. The martial rule thus established was absolute. The military authorities actually took over the government of Hawaii in its entirety. The writ of habeas corpus was suspended, the Commanding General announced that he had "assumed the office of military governor of Hawaii," subsequent legislative acts took the form of General Orders, civil and criminal courts were forbidden to open and were replaced by military commissions and provost courts. As time went on, these restrictions were relaxed in minor ways. Civilian courts as, "agents of the Military Governor," were allowed to handle certain types of civil cases, but were not allowed to summon either grand or trial juries, or exercise criminal jurisdiction. White, a stockbroker having no connection with the armed forces, was charged with embezzling stock belonging to another civilian. He was arrested in August, 1942, tried by a provost court without a jury, and sentenced to five years' imprisonment. Duncan, a civilian shipfitter employed at the Navy Yard at Honolulu, was arrested in February 1944, for assault committed in the course of a brawl with two Marine sentries at the yard. By this time, the civil courts of the Territory were again handling ordinary criminal cases, but military courts still retained jurisdiction to try "criminal prosecutions for violations of military orders." Duncan was charged with violating one of these orders and was tried by a military court, although assault is a crime under the territorial law. White and Duncan sought release through writs of habeas corpus issued by the district court. The military authorities denied the court's right to issue habeas corpus. The district court held that there was no military necessity for the trial of the prisoners by military tribunals, that the trials were therefore void, and that the prisoners should be released. The Circuit Court of Appeals reversed this decision, and the Supreme Court granted certiorari.

In an opinion by Mr. Justice Black, the Supreme Court held the military trials invalid and ordered the prisoners released. Martial law in Hawaii had been established under the authority of Section 67 of the Hawaiian Organic Act of 1900 which empowered the Territorial Governor "in case of rebellion or invasion, or imminent danger thereof, when the public safety requires it," to suspend the writ of habeas corpus, or place the territory "under martial law." The issue is: "Did the Organic Act during the period of martial law give the armed forces power to supplant all civilian laws and to substitute military for judicial trials under the conditions that existed in Hawaii at the time these petitioners were tried?" The Court found that the language of the Organic Act "fails to define adequately the scope of the power given to the military and to show whether the Organic Act provides that courts of law be supplanted by military tribunals." Nor does the legislative history of the Organic Act answer the question. It does show, however, "that Congress did not intend the Constitution to have a limited application to Hawaii," and therefore "whatever power the Organic Act gave the Hawaiian military authorities, such power must . . . be construed in the same way as a grant of power to troops stationed in any one of the states."

The Court held, therefore, that the nature and degree of military power in Hawaii must be measured by "the principles and practices developed during the birth and growth of our political institutions." A brief review of the history of civil-military relations justifies the conclusion that national policy has been opposed to the supplanting of civil courts by military tribunals. In the only case in which the Supreme Court ever discussed the problem (*Ex parte Milligan,* 4 Wallace 2, 1866), "it had emphatically declared that 'civil liberty' and this kind of martial law can not endure together; the antagonism is irreconcilable; and, in the conflict, one or the other must perish." The Court concluded, therefore, that, in passing the Hawaiian Organic Act, Congress did not intend, by Section 67, to authorize the supplanting of civilian courts by military tribunals, and the implication is clear that if the statute had authorized this, it would be unconstitutional.

Mr. Justice Murphy concurred, but urged that the military trials were direct and flagrant violations of the Bill of Rights. Chief Justice Stone concurred on the ground that the military authorities had shown no reasons grounded in the public security for closing the civil courts, and that the trials of White and Duncan were, therefore, unauthorized by the Organic Act and "without lawful authority." Mr. Justice Burton, joined by Mr. Justice Frankfurter, dissented on the ground that the Court should not extend judicial control into the realm of executive and military discretion used for the protection of the public security in time of war.

TRIAL OF WAR CRIMINALS—YAMASHITA AND HOMMA

In *In re Yamashita* (Feb. 4) the Court sustained the validity of the trial by a military commission of the Japanese General on charges of violating the law of war. After General Yamashita's surrender in September, 1945, he was held as a prisoner of war and subsequently charged with violations of the laws of war. He was tried before a military commission of five Army officers, found guilty, and sentenced to be hanged. The Supreme Court of the Philippines refused a writ of habeas corpus, and the U. S. Supreme Court, after argument on the merits, did likewise. Chief Justice Stone's opinion disposes of the four attacks made upon the jurisdiction and procedure of the military commission. First, the order creating the commission was issued in strict conformity to the act of Congress "sanctioning the creation of such tribunals for the trial of offences against the law of war committed by enemy combatants." The authority to create such military tribunals is not automatically terminated by the end of hostilities, but continues at least until the formal state of war has been ended by action of the political branch of the government. Second, the charges against the general correctly stated a violation of the law of war. He was charged with failing to "control the operations of the members of his command, permitting them to commit brutal atrocities and other high crimes. . . ." The law of war imposes a positive duty on commanders to take such measures as are in their power to protect prisoners of war and the civilian population. General Yamashita was properly charged with a breach of this duty. Third, the military commission admitted hearsay and opinion evidence as well as depositions against the accused. In the trial of an enemy combatant, this is entirely proper. No act of Congress or treaty dictates the procedure which must be followed in such trials. Control over such procedure lies with the military command. "We hold that the commission's rulings on evidence and on the mode of conducting these proceedings against petitioner are not reviewable by the Courts, but only by the reviewing military authorities. From this viewpoint it is unnecessary to consider what, in other situations, the Fifth Amendment might require. . . ." Fourth, Article 60 of the Geneva Convention of 1929 requires that when a prisoner of war is put on trial the "protecting power" must be at once notified. Switzerland was the power designated by Japan for the protection of Japanese prisoners of war held by the United States. Switzerland was not given notice of Yamashita's trial. The Court held that Article 60 applies only to persons brought to trial for offences committed while prisoners of war.

Justices Murphy and Rutledge filed long and eloquent dissenting opinions. Their principal attack was upon the Court's refusal to apply the test of due process of law to the military commission's procedure. Mr. Justice Murphy said: "No military necessity or other emergency demanded the suspension of the safeguards of due process. Yet petitioner was rushed to trial upon an improper charge, given insufficient time to prepare an adequate defense, deprived of the benefits of some of the most elementary rules of evidence and summarily sentenced to be hanged . . . such a procedure is unworthy of the traditions of our people."

In the case of *In re Homma* (Feb. 4), the Japanese General in command at the time of the "march from Bataan," the same issues were raised as in Yamashita's case. The Court sustained the validity of the military trial without writing an opinion. Again Justices Murphy and Rutledge protested against the denial of procedural due process. Mr. Justice Murphy observed: "Today the lives of Yamashita and Homma, leaders of enemy forces vanquished in the field of battle, are taken without regard to due process of law. There will be few to protest. But tomorrow the precedent here established can be turned against others. A procession of judicial lynchings without due process of law may now follow. No one can foresee the end of this failure of objective thinking and of adherence to our high hopes of a new world . . . a nation must not perish because, in the natural frenzy of the aftermath of war, it abandoned its central theme of the dignity of the human personality and due process of law."

DRAFT ACT CASES

In *Falbo v. United States* (320 U. S. 549, 1944), the Court had denied to a Jehovah's Witness the right to judicial review of the correctness of his classification under the Selective Service Act on the ground that he had failed to exhaust his administrative remedies by submitting to induction. In *Estep v. United States* (Feb. 4), a draft registrant, also a Jehovah's Witness, while protesting his classification, presented himself for induction and then refused to submit to it. He was tried and convicted of violating the statute, but was not allowed in his defense to attack the correctness of his classification by the local board, or to introduce proof that he was in fact a minister of religion. The Court, speaking through Mr. Justice Douglas, granted a new trial. It declined to construe the statute as making final the findings of the local boards on the classification of registrants. To do so would permit them to determine finally their own jurisdiction under the act and even to exceed it. The Court plainly implied that if the statute did preclude judicial review of the correctness of the board's findings it would deny due process of law.

The measure of a veteran's right to reemployment, as defined by the Selective Service Act, was brought before the Court in a suit for a declaratory judgment in *Fishgold v. Sullivan Drydock & Repair Corp.* (May 27). Fishgold was reemployed by the company after his discharge from the Army. After some months, slackened work at the shipyard required the laying off of men. Under a collective bargaining agreement between the company and its men, layoffs were to be governed by seniority, those having higher seniority to be retained longest. Fishgold was laid off although non-veterans having higher shop seniority were kept. The Court, in an opinion by Mr. Justice Douglas. held that this did not violate the statute. The act forbids the discharge of a returned veteran within a year, but a "person who has been laid off . . . would hardly be considered as having been "discharged." Furthermore, the statute does not grant the veteran an increase in seniority over what he would have had if he had never entered the armed services. It merely protects him against loss of ground or demotion upon his return. "There is no suggestion that Congress sought to sweep aside the seniority system. What it undertook to do was to give the veteran protection within the framework of the seniority system."

BILL OF ATTAINDER—CONGRESSIONAL DENIAL OF SALARY TO FEDERAL EMPLOYEES

The most spectacular episode in the campaign by certain committees of Congress to "purge" the Federal service of employees alleged to be disloyal or "subversive" was brought to an end by the Court's decision in *United States v. Lovett* (June 3). In February 1943, Martin Dies, Chairman of the House Committee on Un-American Activities, charged in the House of Representatives that 39 Federal Employees whom he named were Communists or "fellow-travelers" as well as "irresponsible, crackpot, radical bureaucrats." He urged that Congress, then considering the annual appropriation bills, should provide that no funds appropriated by the bills should be used to pay the salaries of these employees. Unwilling to proceed in so summary a fashion, the House set up the so-called "Kerr Committee," a subcommittee of the Committee on Appropriations, to investigate further the loyalty of the accused men and report to the House upon their fitness to hold public office. The Kerr Committee conducted *ex parte* inquiries into the records, views, and writings of nine of the men, exonerated six of them, but reported that Robert Morse Lovett, Secretary of the Virgin Islands, and Gordon B. Watson and William E. Dodd, Jr., both on the staff of the Federal Communications Commission, were found guilty of "subversive activity" and were "unfit" to continue in government service. The administrative superiors of the three employees staunchly defended them and refused to dismiss them. The House thereupon passed a rider to the Urgent Deficiency Appropriation Bill for 1943 providing that no salary or compensation should be paid to Lovett, Watson, or Dodd out of any monies then or thereafter appropriated, except for services as jurors or members of the armed services, unless prior to Nov. 15, 1943, the President with the advice and consent of the Senate again appointed them to positions in the government. The Senate rejected the rider five times by overwhelming majorities, but finally felt compelled to agree. In signing the bill, President Roosevelt stated that he would have vetoed the rider had it been possible to do so, since he regarded it as unconstitutional.

The three men remained at work for varying periods of time at their respective jobs after Nov. 15, but received no salary after that date. They sued in the Court of Claims to recover pay for this post-Nov. 15 work on the ground that the rider depriving them of salary was unconstitutional. The Attorney General declined to represent Congress in this controversy, and Congress was obliged to employ outside counsel to defend the suit. The Department of Justice filed a brief attacking the constitutionality of the congressional rider. The Court of Claims gave the three men judgment on the narrow ground that the legislative rider did not terminate their employment but merely forbade their compensation out of funds generally appropriated, and that therefore their continued employment was valid and that they could secure payment for it from funds allocated to the satisfaction of judgments allowed by the Court of Claims. Two members of the Court held the rider unconstitutional. In the Supreme Court, it was urged on behalf of Congress that the rider was passed in the exercise of the delegated power of Congress over appropriations, which is plenary and not subject to judicial review. On this assumption, the issue of the constitutionality of the rider is not a justiciable controversy. It was also argued that the rider did not purport to terminate the employment of the three men, but merely cut off their pay and therefore could not be regarded as a punitive measure or as a usurpation of the executive power of removal. On behalf of Lovett, Watson, and Dodd, it was argued that the rider was a bill of attainder and an *ex post facto* law, was a legislative usurpation of executive power, and, by discriminating against these three men, deprived them of liberty and property without due process of law.

The opinion of Mr. Justice Black, holding the legislative rider invalid, covered but two points. First, the record presents a justiciable controversy. A résumé of the history of the efforts of the House of Representatives, through its various committees, to uncover "subversive activities" upon the part of Federal employees and to purge the public service of such persons forces the conclusion that the rider was intended to deprive the three men mentioned by it of their employment and to bar them permanently from the Federal service. It was not, therefore, a simple exercise of the power to make appropriations, but was in effect a punitive measure. As such it presents a clearly justiciable issue. Second, the rider must be classified as a bill of attainder. From the two "test oath" cases, *Cummings v. Missouri* (4 Wallace 277, 1867), and *Ex parte Garland* (4 Wallace 333, 1867), the Court derives the definition that "legislative acts, no matter what their form, that apply either to named individuals or to easily ascertainable members of a group in such a way as to inflict punishment on them without judicial trial are bills of attainder prohibited by the Constitution." The legislative denial of "any opportunity to serve the Government is punishment, and of a most severe type." The Court continues: "Section 304 [the rider] thus, clearly accomplishes the punishment of named individuals without a judicial trial. The fact that the punishment is inflicted through the instrumentality of an Act specifically cutting off the pay of certain named individuals found guilty of disloyalty, makes it no less galling or effective than if it had been done by an Act which designated the conduct as criminal. No one would think that Congress could have passed a valid law, stating that after investigation it had found Lovett, Dodd, and Watson 'guilty' of the crime of engaging in 'subversive activities,' defined that term for the first time, and sentenced them to perpetual exclusion from any government employment. Section 304, while it does not use that language, accomplishes that result. The effect was to inflict punishment without the safeguards of a judicial trial and 'determined by no previous law or fixed rule.' The Constitution declares that that can not be done either by a state or by the United States."

POSTAL CENSORSHIP—THE ESQUIRE CASE

In *Hannegan v. Esquire* (Feb. 4). the Court upheld an injunction restraining the Postmaster General from enforcing an order revoking the second-class permit of *Esquire Magazine*. While the decision turned on the interpretation of the postal statutes, rather than the First Amendment, it struck an important blow at arbitrary censorship. *Esquire Magazine* was given a second-class permit in 1933. In 1943 it was ordered by Postmaster General Walker to show cause why the permit should not be suspended or revoked. A hearing was had before a board designated by the Postmaster General, and the board recommended that the permit not be revoked. At this hearing attention was focussed on the question whether the magazine could be regarded as obscene. Numerous persons were called to express opinions upon this question with the divergent and inconclusive results which might have been anticipated. The Postmaster General thereupon overruled the hearing board and revoked *Esquire's* second-class permit. He did not rest this action on the ground that the magazine was obscene and therefore unmailable. He relied rather upon the section of the Classification Act of 1879 which states the conditions under which second-class permits shall issue. The fourth of the conditions there set up reads as follows: "It [the publication] must be originated and published for the dissemination of information of a public character, or devoted to literature, science, arts, or some special industry, and having a legitimate list of subscribers" . . . Publications "designed primarily for advertising purposes" are specifically barred from second-class privileges. The Postmaster General interpreted this provision in the following words: "A publication to enjoy these unique mail privileges and special preferences is bound to do more than refrain from disseminating material which is obscene or bordering on the obscene. It is under a positive duty to contribute to the public good and the public welfare." The Postmaster General is, therefore, empowered to revoke the second-class permit of *Esquire* or any other publication if, in his judgment, it does not thus contribute to the public good.

A unanimous court vigorously rejected the Postmaster General's interpretation of the statute. Speaking through Mr. Justice Douglas, the Court examined the legislative history of the Classification Act and found no evidence of Congressional intention to delegate to the Postmaster General any powers of censorship by the provision here invoked. There is nothing to support the idea "that each applicant for the second-class rate must convince the Postmaster General that his publication positively contributes to the public good or the public welfare." The Court observes ". . . a requirement that literature or art conform to some norm prescribed by an official smacks of an ideology foreign to our system. The basic values implicit in the requirements of the Fourth condition can be served only by uncensored distribution of literature . . . to withdraw the second-class rate from this publication today because its contents seemed to one official not good for the public would sanction withdrawal of the second-class rate tomorrow from another periodical whose social or economic views seemed harmful to another official . . . Congress has left the Postmaster General with no power to prescribe standards for the literature or the art which a mailable periodical disseminates."

NATURALIZATION OF PERSONS UNWILLING TO BEAR ARMS

In three earlier decisions in 1929 and 1931, the Court, in each case by a five-to-four vote, denied citizenship to applicants who refused to swear that they would bear arms in defense of this country, or who put limitations dictated by conscience upon their willingness to do so. These were the cases of *United States v. Schwimmer* (279 U. S. 644, 1929), *United States v. Macintosh* (283 U. S. 605, 1931), and *United States v. Bland* (283 U. S.. 1931). The division in the Court had been emphasized by the persuasive dissents of Mr. Justice Holmes in the *Schwimmer* case, and of Chief Justice Hughes in the *Macintosh* case. In *Girouard v. United States* (April 22) the Court overruled the three cases just named and admitted to citizenship a Seventh Day Adventist who declared himself unwilling to take up arms in defense of this country, but was willing to perform any military service which was not "combatant military duty."

In an opinion by Mr. Justice Douglas the Court emphasized that the crucial issue is one of statutory construction. The statute requires an alien before admission to citizenship to declare on oath in open court that "he will support and defend the Constitution and laws of the United States against all enemies, foreign and domestic, and bear true faith and allegiance to the same." The oath does not in terms require a promise to bear arms, and it is obvious that there are many other ways in which a citizen may support and defend our institutions than by doing so. "Refusal to bear arms is not necessarily a sign of disloyalty or a lack of attachment to our institutions. One may serve his country faithfully and devotedly, though his religious scruples make it impossible for him to shoulder a rifle."

The oath required of Federal officers is "in no material respect different from that prescribed for aliens under the Naturalization Act." This oath does not disqualify conscientious objectors from holding Federal office, and there is no evidence that Congress intended to set a stricter standard for admission to citizenship than for officials of the government. This construction of the act is supported by the legislation of 1942 under which aliens who served honorably in the armed forces of the United States may expedite their naturalization. They must take the same oath, but the statute plainly applies to noncombatants as well as combatants. The Court relies chiefly, however, upon the doctrine and the tradition of freedom of thought and freedom of religion so powerfully presented in Holmes' classic dissent in the *Schwimmer* case. It is unwilling to ascribe to Congress, in the absence of the most cogent evidence, a willingness to depart from the traditional protection of this freedom of thought. Chief Justice Stone, joined by Justices Reed and Frankfurter, dissented on the ground that Congress, by 15 years of silence and inaction, must be held to have adopted and confirmed the construction placed by the Court upon the Naturalization Act in the *Schwimmer* and *Macintosh* cases. The Chief Justice had himself dissented in the *Macintosh* and *Bland* cases, but argued that since no constitutional point was involved, the rule of those cases must now be changed, if at all, by Congress and not by the Court.

FREEDOM OF THE PRESS AND RELIGION

Cases involving freedom of the press and religion announced no new doctrine, but extended the reach of previously established principles. The case of *Pennekamp v. Florida* (June 3), turned on an issue almost identical with that in *Bridges v. California* (314 U. S. 252, 1941). Pennekamp, associate editor of a Florida newspaper, was cited for contempt by a Florida circuit court. The contempt action was based on two editorials criticizing the circuit court and its judges for its handling of certain criminal cases then pending before the court. The editorials portrayed the court as obstructing the efficient enforcement of the criminal law by the unjustified quashing of indictments and the use of other legal technicalities. The inference suggested was that the Court was willfully extending protection to lawbreakers. The record showed that the editorials contained "halftruths," did not "fairly report the proceedings of the court," and contained "misinformation."

Speaking through Mr. Justice Reed,

the Court reversed the conviction on the ground that there was no adequate showing of "clear and present danger" to the fair and efficient administration of justice. The editorials did not comment on evidence or rulings made during a jury trial, but were directed solely against the judges. As in the *Bridges* case, the Court suggested that able and courageous judges would not be influenced by such newspaper comment. "Freedom of discussion should be given the widest range compatible with the essential requirement of the fair and orderly administration of justice." The contempt citation was held to deny due process of law.

Marsh v. Alabama (Jan. 7) and *Tucker v. Texas* (Jan. 7) upheld as a protected exercise of religious liberty the right of Jehovah's Witnesses to distribute religious literature on the streets of a company owned town and a federally owned village built and managed by the Federal Public Housing Authority. In the *Marsh* case, conviction was for the violation of a state statute making it a crime to enter or remain on the premises of another after having been warned not to do so. Tucker's conviction was under a statute making it an offense for "any peddler or hawker of merchandise" wilfully to refuse to leave the premises after having been notified to do so by the owner.

Mr. Justice Black wrote both opinions. It is well established that states and municipalities can not bar the distribution of religious or political literature on their streets, or make such distribution dependent upon the payment of a tax, or subject to the permission of an official who could deny it at will. The fact of the private ownership of the land in these cases is not controlling. Ownership does not mean absolute dominion. When an owner opens up his property for use by the public, his rights become circumscribed by the statutory and constitutional rights of those who use it. The public has an interest "in the functioning of the community in such a manner that the channels of communication remain free." A state statute, which enforces curtailment by the owner of the land, of liberty, of press and religion, violates the First and Fourteenth Amendments. "When we balance the Constitutional rights of owners of property against those of the people to enjoy freedom of press and religion, as we must here, we remain mindful of the fact that the latter occupy a preferred position." In the *Tucker* case it is stated that neither Congress nor any Federal agency acting under its authority could abridge religious liberty, nor is there any indication in the Federal statutes or the Housing Authority Regulations of any intention to do so. In both cases Chief Justice Stone and Justices Reed and Burton dissented.

FEDERAL JURIES—EXCLUSION OF WAGE-EARNERS AND WOMEN

In *Thiel v. Southern Pacific Co.* (May 20), the Supreme Court ordered retrial in a case in a Federal district court which had been tried before a jury drawn from a panel from which wage-earners had been systematically excluded. The case involved a suit brought against the railroad by an injured passenger. The plaintiff moved to strike out the entire jury panel on the ground that it comprised "mostly business executives or those having the employer's viewpoint." As it turned out, five of the 12 jurors drawn were found to "belong more closely and intimately with the working man and the employee class than they do with any other class." However, the undisputed evidence of the clerk of the Court and the jury commissioner was that "they deliberately and intentionally excluded from the jury lists all persons who work for a daily wage." The motive for this exclusion was the protection of wage-earners from the financial sacrifice involved in serving as jurors at $4 a day when prevailing wage rates are much higher. This did not meet the Court's objection.

Mr. Justice Murphy stated the Court's position as follows: "The American tradition of trial by jury, considered in connection with either criminal or civil proceedings, necessarily contemplates an impartial jury drawn from a cross-section of the community. . . . This does not mean, of course, that every jury must contain representatives of all the economic, social, religious, racial, political and geographical groups of the community; frequently such complete representation would be impossible. But it does mean that prospective jurors shall be selected by court officials without systematic and intentional exclusion of any of these groups. Recognition must be given to the fact that those eligible for jury service are to be found in every stratum of society. Jury competence is an individual rather than a group or class matter. That fact lies at the very heart of the jury system. To disregard it is to open the door to class distinctions and discriminations which are abhorrent to the democratic ideals of trial by jury." This, however, would not prevent a trial judge from excusing from jury duty a daily wage-earner for whom such service would mean undue financial hardship.

The principle just stated was applied in *Ballard v. United States* (Dec. 9) to order retrial in a case in a Federal court in which women had been systematically excluded from the jury panel. The trial was held in California. In California, women are eligible for jury service under local law. Congress has provided that jurors in a Federal court shall have the same qualifications as those of the highest court of law in the state. Women were therefore eligible for jury service in Federal courts in California. Their systematic exclusion from the jury panel accordingly violates the principle stated in the *Thiel* case that a jury must be drawn from a cross-section of the community. It is a departure from the scheme of jury selection provided for by Congress. The facts of this case made it unnecessary for the Court to answer the question whether the doctrine of the *Thiel* case would forbid on constitutional grounds the exclusion of women from Federal juries in states whose laws do not make women eligible for jury service in state courts. Four justices, including Chief Justice Vinson, dissented in this case.

POLITICAL QUESTIONS—ILLINOIS CONGRESSIONAL DISTRICT CASE

In 1901 the Illinois legislature apportioned the state into 25 congressional districts, and has not since changed them. Drastic changes in population have occurred since that date, and Chicago now has 43 per cent of the state's total. The population of the congressional districts now ranges from 112,116 to 914,000. Year by year these inequalities have grown more grotesque. Efforts to compel reapportionment by resort to the state courts had failed. *Colegrove v. Green* (June 10) started as a suit for a declaratory judgment against the state officers comprising the State Primary Certifying Board, the effect of which would be to declare the present congressional apportionment invalid and require the election of all representatives from Illinois on a statewide ballot until the legislature passed a valid districting statute. Precedent for such a ruling is found in *Smiley v. Holm* (285 U. S. 355, 1932), in which the Court ordered representatives from Minnesota elected at large after the state's representation in Congress had been reduced from ten to nine after the Census of 1930 and the state had failed to pass a valid redistricting statute. The plaintiffs also argued that the existing inequalities in the Illinois apportionment of representatives deprive them of the equal protection of the laws, and abridge their privileges as citizens of the United States by depriving them of the constitutional right to have their votes cast in a congressional election counted at their full value. The district court dismissed the suit on the authority of *Wood v. Broom* (287 U. S. 1, 1932), in which the Court refused to pass upon the validity of a gerrymander in Mississippi because Congress had omitted from the Apportionment Act of 1929 the provision (contained in all earlier acts since 1872) that congressional districts be composed of "contiguous and compact territory, and contain as nearly as practicable an equal number of inhabitants."

A Supreme Court of seven, dividing four to three, dismissed the suit. Announcing the judgment of the Court, Mr. Justice Frankfurter declared that the case could be disposed of on the authority of *Wood v. Broom.* He went further, however, and held that the issue raised is non-justiciable. It belongs to the class of controversies which are of "a peculiarly political nature and therefore not meet for judicial determination." After a lengthy analysis of the complexities, controversies, and partisan conflicts bound up in the history of legislative apportionment, with its numerous disparities and gerrymanders, he concluded "Courts ought not to enter this political thicket. The remedy for unfairness in districting is to secure state legislatures that will apportion properly, or to invoke the ample powers of Congress." Mr. Justice Rutledge concurred. He was unwilling, for fear of upsetting *Smiley v. Holm,* to hold that questions regarding apportionment are non-justiciable. He supported the Court's refusal to decide the case on the ground of want of equity.

A persuasive dissenting opinion by Mr. Justice Black, joined by Justices Douglas and Murphy, supports the constitutional arguments of the plaintiffs. The Illinois apportionment of 1901 denies them the equal protection of the laws. "No one would deny that the equal protection clause would also prohibit a law that would expressly give certain citizens a half-vote and others a full vote." But under the existing apportionment certain Illinois citizens will cast a vote only one-ninth as effective as those cast by others. The Illinois act also abridges the privileges of citizens to vote for members of Congress and have their votes fairly counted. This right plainly implies that the votes cast shall be of equal weight. If Illinois had apportioned 23 congressmen to the state's smallest county and one to all the others, nobody would deny that the constitutional rights of citizens had been impaired. The present apportionment is less objectionable only in degree. To call the issues here presented "political" in nature is a mere "play on words." The issues are no more "political" than those in the white primary cases in which the Court has jurisdiction. What the Court is asked to do is exactly what it did in *Smiley v. Holm.* The plaintiff's petition for rehearing was denied by the Court in October, and a motion for reargument before the full bench was denied in November.

An attempt was made to attack in the United States District Court the Georgia "county unit system" of voting which disregards popular votes in a manner analogous to the system of electoral votes by which the President is elected. It was urged that this deprived voters of the equal protection of the laws. The district court denied relief. The appeal taken in this case (*Turman v. Duckworth*) was dismissed by the Supreme Court without opinion. Justices Black, Murphy, and Rutledge thought that argument should have been heard on the merits in order to settle the question of jurisdiction.

FEDERAL-STATE RELATIONS—SUPREMACY OF FEDERAL LAW

In *New York v. United States* (Jan. 14), a divided Court writing four opinions re-examined the doctrine followed in a series of cases beginning in 1905 with *South Carolina v. United States* (199 U. S. 437) which held that although the Federal Government might not tax the activities of a state when engaged in "its ordinary functions as a government," it could validly tax the state when it was engaged in "the carrying on of an ordinary private business." The state sale of liquor is such "an ordinary private business." New York, with 45 other states supporting its legal position, protested the collection by the Federal Government of excise taxes on the state's sale of mineral waters taken from Saratoga Springs. The state urged that such sale was "a usual, traditional and essential governmental function." The six justices upheld the Federal tax but on three different grounds.

Mr. Justice Frankfurter, in announcing the judgment of the Court, rejected the perhaps over-simplified distinction of the South Carolina case doctrine between "proprietary" and "governmental" state functions as determining state immunity from Federal taxation. "To rest the federal taxing power on what is 'normally' conducted by private enterprise in contradiction to the 'usual' governmental functions is too shifting a basis for determining constitutional power and too entangled in expediency to serve as a dependable legal criterion." His position is summed up as follows: "So long as Congress generally taps a source of revenue by whomsoever earned and not uniquely capable of being earned only by a state, the Constitution of the United States does not forbid it merely because its incidence falls also on a state." Mr. Justice Rutledge agreed with this but added that he thought Congress ought to make clear in each case its intention to have general Federal excises fall on state activities. Mr. Justice Reed, joined by Justices Murphy and Burton, stated that the problem can not be solved by a formula. The crucial test should be the actual or potential effect of the immunity from Federal taxation of any state activity upon the revenue power of the Federal Government. "The effect of the immunity on the national taxing power is to be determined not quantitatively but by its operation and tendency in withdrawing property or activities from the reach of federal taxation. Not the extent to which a particular State engages in the activity, but the nature and extent of the activity by whomsoever performed is the relevant consideration." Mr. Justice Douglas, joined by Justice Black, dissented in an opinion which rejects as unsound the doctrine of the South Carolina case or any other doctrine which supports the Federal taxation of any state activity, no matter what its nature may be. "The major objection is that it disregards the Tenth Amendment, places the sovereign states upon the same plane as private citizens, and makes the sovereign states pay the federal government for the privilege of exercising the powers of sovereignty guaranteed them by the Constitution." Thus, in a situation already complex, the Court has made four theories grow where only one grew before.

OPA REGULATIONS APPLICABLE TO STATES AND COUNTIES

The Washington State Commissioner of Public Lands held an auction sale of school land (land-grant) timber. A lumber company made a bid for the timber which was higher than the OPA ceiling price. The Federal Price Administrator sought an injunction restraining the completion of the sale at the bid price. The state defended the action on the ground that the Emergency Price Control Act was not intended by Congress to apply to the states, and that if it did so apply it violated the Fifth and Tenth Amendments. In *Case v. Bowles* (Feb. 4), the Court, in an opinion by Mr. Justice Black, sustained the injunction. Congress plainly intended the statute to apply to the states and their political subdivisions, and the Court will not frustrate the purpose of Congress by reading into its provisions exemptions which Congress did not see fit to put there.

The argument based on the Tenth Amendment is disposed of as follows: "Since the decision in *McCulloch v. Maryland,* it has seldom if ever been doubted that Congress has power in order to attain a legitimate end . . to use all appropriate means plainly adapted to that end. . . . And we have said, that the Tenth Amendment 'does not operate as a limitation upon the powers, express or implied, delegated to the National Government.' . . . Where as here, Congress has enacted legislation authorized by its granted powers, and where at the same time, a state has a conflicting law, which but for the Congressional Act would be valid, the Constitution marks the course for courts to follow." In *Hulbert v. Twin Falls County* (Feb. 4), OPA regulations were held applicable to the sale of tractors by

U OF I
LIBRARY

a county. Mr. Justice Douglas dissented in both cases on the ground that the intent of Congress to apply OPA controls to the states was not clear.

SEGREGATION OF NEGROES BY STATE LAW ON INTERSTATE BUSES

Of the cases involving the validity of state police regulations affecting interstate commerce, the most important was *Morgan v. Virginia* (June 3) in which the Court held that a Virginia statute requiring the segregation of Negroes and whites on interstate buses unduly burdened interstate commerce. Mr. Justice Reed for the Court emphasized that in the field of transportation where Congress has not acted, "a state may validly enact legislation which has predominantly only a local influence on the course of commerce." State statutes regulating racial association on interstate vehicles have much more than a local influence. Bus transportation reaches all over the country. Eighteen states prohibit racial segregation on public carriers, while ten states require segregation on motor carriers. The enforcement of these state laws against carriers engaged in interstate transportation produces cumulative inconveniences and burdens, among which are the repeated shifting of seats upon reaching state lines as well as the difficulties of applying the various definitions used to identify white and colored passengers. In *Hall v. De Cuir* (95 U. S. 485, 1877), the Court held that interstate commerce was invalidly burdened by a state law forbidding racial segregation on public conveyances. "The transportation difficulties arising from a statute that requires commingling of the races, as in the *De Cuir* case, are increased by one that requires separation, as here." The Court concludes: "It seems clear to us that seating arrangements for the different races in interstate motor travel require a single, uniform rule to promote and protect national travel. Consequently, we hold the Virginia statute in controversy invalid."

FAIR LABOR STANDARDS ACT

In several cases the Court added to its already long list of employments subject to the provisions of the Fair Labor Standards Act on the basis of their connection with interstate commerce. *Maybee v. White Plains Publishing Co.* (Feb. 11) held the act applicable to the employees of a newspaper with a daily circulation of 11,000, one-half of one per cent of which went out of the state. In *Martino v. Michigan Window Cleaning Co.* (Feb. 4), the act was applied to the employees of a company whose business was to clean the windows of buildings the occupants of which were engaged in the production of goods for interstate commerce. In *Roland Electric Co. v. Walling* (Jan. 28), the company was engaged in "commercial and industrial wiring, electrical contracting, and dealing in electrical motors and generators, for private, commercial and industrial uses." Its customers, or some of them, were engaged in interstate commerce. Its employees were held to be covered by the Fair Labor Standards Act. In *Boutell v. Walling* (Feb. 25), the employees held to be covered by the act were mechanics engaged in greasing and repairing motor vehicles which were rented for the transportation of automobiles and army equipment in interstate commerce.

PORTAL-TO-PORTAL PAY CASE—MT. CLEMENS POTTERY CASE

In *Anderson v. Mt. Clemens Pottery Co.* (June 10), the Court was faced with claims of factory workers, grounded on the provisions of the Fair Labor Standards Act, for overtime compensation for periods of time, prior to the beginning and after the end of the standard working day, during which they engaged in activities incidental to their employment. It was this decision which set the stage for the suits totaling billions of dollars later brought by a large number of labor unions for so-called "portal-to-portal" pay. The facts in the case are complex. The company employs about 1,200 men, 95 per cent of whom are paid on a piece-work basis. The plant covers eight acres and is a quarter of a mile long. Whistles are blown for the different shifts to indicate when actual working time begins and ends. A period of 14 minutes before starting time allows employees to enter the plant, punch the time clock, walk to their places of work, change their clothes, prepare materials, etc. for work. A 14-minute period is also allowed after the end of the work period to enable the men to get ready to leave, and punch the time clock. The time for which the employees are paid extends from the next even quarter hour after they punch in to the quarter hour just before the time when they punch out. "Thus an employee who punches in at 6:46 a.m., punches out at 12:14 p.m., punches in again at 12:46 p.m., and finally punches out at 4:14 p.m., is credited with having worked the 8 hours between 7 a.m. and 12 noon and between 1 p.m. and 4 p.m.—a total of 56 minutes less than the time recorded by the time clocks."

The suit was started to recover overtime pay for this additional time of approximately 56 minutes per day. The district court appointed a master to make a finding of facts. The master recommended that the suit be dismissed on the ground that the employees had not established their claims by a "fair preponderance of evidence." He found that the time spent in walking from the entrance to the place of work need not be paid for in view of the established custom of the industry. The time spent in preliminary duties after arriving at the place of work was not compensable since the employees had produced no reliable figures to show the actual amount of such time. The time spent in waiting before and after shift periods need not be paid for because it was not shown that the employees were required to put in this waiting time or that they did not use it for their own purposes. The district court accepted most of these findings but made one modification. It allowed compensation, not for the four 14-minute periods, but for a little less than half this amount of time on the theory that the men probably began productive work this much ahead of the scheduled time inasmuch as they worked piece work, and it would be to their advantage to do so. The Circuit Court of Appeals agreed with the master and dismissed the suit on the ground that the employees had not sustained the burden of proving by a preponderance of evidence that they were not being paid the wages to which they were entitled.

Mr. Justice Murphy spoke for the Court in a decision which upheld the claims of the plaintiffs, and sent the case back to the district court for determination of the actual amount of time for which additional pay was due. The Court made the following points. First, the employee does not assume under the statute the burden of proving by accurate figures the precise amount of overtime for which he claims compensation. It is upon the employer, not the employee, that the act places the duty of keeping accurate records of working time and other relevant facts. It is sufficient if the employee proves "that he has in fact performed work for which he was improperly compensated and if he produces sufficient evidence to show the amount and extent of that work as a matter of just and reasonable inference." Second, the employees did not prove that they were engaged in work from the time they punched in to the time they punched out. It is recognized that the time-clock records can not accurately register actual working time, and they can not, therefore, be made the sole basis of determining the statutory workweek. Third, they did prove that they had to be on the premises for some time before actually beginning work. Some of this time was spent in walking to the place of work, and some of it was used in various preliminary activities necessary for the beginning of productive work, and therefore carried on for the employer's benefit. The time used in these two ways is "working time" within the meaning of the statute and must be paid for. The Court recognized that in some instances the amounts of time involved might be so small as to be negligible. "Split-second absurdities are not justified by the actualities of working conditions or by the policy of the Fair Labor Standards Act. It is only when an employee is required to give up a substantial measure of his time and effort that compensable working time is involved." The evidence indicated that the amounts of time here involved were substantial and this justifies the Court's direction that these amounts be accurately measured so that compensation and damages could be determined.

"DEATH SENTENCE" PROVISION OF THE PUBLIC UTILITY HOLDING COMPANY ACT

In *Electric Bond & Share Co. v. Securities and Exchange Commission* (303 U. S. 419) in 1938, the Court held valid the provisions of the Public Utility Holding Company Act of 1935 which required holding companies to register with the commission and forbade them to use the mails or interstate commerce if they failed to do so. The Court did not, however, pass upon the validity of the famous "death sentence" provision of the statute which provided that as soon as practicable after Jan. 1, 1938, the Securities and Exchange Commission should "require by order, after notice and opportunity for hearing, that each registered holding company, and each subsidiary company thereof, shall take such steps as the Commission shall find necessary to insure that the corporate structure or continued existence of any company in the holding-company system does not unduly or unnecessarily complicate the structure, or unfairly or inequitably distribute voting power among security holders, of such holding company system."

In *American Power & Light Co. v. Securities and Exchange Commission* (Nov. 25), the Court, without dissent, held this "death sentence" provision constitutional. The case arose from an order of the Commission directing the dissolution of the American Power & Light Co. and the Electric Power & Light Corporation as holding companies whose continued existence violated the standards stated in the "death sentence" provision. The Court's opinion covered the following points: First, the provision is valid under the commerce clause. "Congress, of course, has undoubted power under the commerce clause to impose relevant conditions and requirements on those who use the channels of interstate commerce so that those channels will not be conduits for promoting or perpetuating economic evils." Second, the Court finds no unconstitutional delegation of legislative power to the Commission. Sufficiently clear standards are set up for its guidance. Third, there is no denial of due process in the procedures by which the Commission is required to act under the "death sentence" provision, or by which it did act in the present case. Fourth, the Commission acted within the range of its statutory discretion in determining that dissolution of the two holding companies was necessary in order to meet the standards established by Congress. The act plainly contemplates dissolution as one of the available methods of accomplishing the purpose of the act. The Commission was not, therefore, exceeding its power because less drastic alternative methods might have been tried. The Commission considered alternative plans and rejected them.

FEDERAL ADMINISTRATIVE AGENCIES

By John A. Tillema
Professor, George Washington University

REJECTION OF REORGANIZATION PLAN NO. 1

On May 16, 1946, President Truman, in pursuance of the Reorganization Act of Dec. 20, 1945, submitted to Congress three Reorganization Plans. Of these, Plan No. 1 was rejected by both the Senate and the House of Representatives by substantial majorities, because it provided for the retention of such government enterprises as Federal Housing. Objection was also raised to the circumstance that this plan provided for the retention of too large an administrative personnel. The main features of Plan No. 2 and Plan No. 3 which were approved are as follows:

REORGANIZATION PLAN NO. 2 (1946)

Section 1, Children's Bureau.—(a) The Children's Bureau in the Department of Labor, exclusive of the industrial division, was transferred to the Federal Security Agency. (b) The functions of the Children's Bureau and of the Chief of the Children's Bureau under the Fair Labor Standards Act of 1938 were transferred to the Secretary of Labor.

Section 2, Vital Statistics.—The functions of the Secretary of Commerce, the Bureau of Census and the Director of the Bureau of Census were transferred to the Federal Security Administrator to be performed under his direction and control by the United States Health Service or by such officers and employees of the Federal Security Agency as the Administrator shall designate.

Section 3, United States Employees Compensation Commission.—The functions of this agency were transferred to the Federal Security Agency to be performed under such rules and regulations as the Administrator shall direct, except that the regulations shall provide for a board of three persons to be designated or appointed by the Security Administrator with authority to hear and make final decisions on appeals taken from determinations and awards with respect to claims of employees of the Federal Government or of the District of Columbia. The United States Employees Compensation Commission was abolished.

Section 4, Social Security Board.—The Social Security Board was abolished and its functions transferred to the Federal Security Administrator.

Section 5, Assistant Heads of Federal Security Agency.—In addition to the existing Federal Security Administrator, there are to be not more than three assistant heads of the Federal Security Agency, each of whom is to be appointed by the Administrator under the classified Civil Service and to receive a salary of $10,000 per annum.

Section 6, Functions Respecting the Blind.—These functions belonging to the Office of Education under the Act of June 30, 1936, were transferred to the Federal Security Administrator.

Section 7, Assistant Commissioner of Education.—The Office of the Assistant Commissioner of Education was abolished and the functions transferred to the Office of Education to be under the control of the Commissioner of Education.

Section 8, Federal Board for Vocational Education.—This board and all its functions were abolished.

Section 9, Board of Visitors of St. Elizabeth's Hospital.—This board and all its functions were also abolished.

Section 10, Coordination of Grant-in-Aid Programs.—To coordinate fuller grant-in-aid programs by officers and units of the Federal Security

Agency, the Federal Security Administrator was directed to establish in so far as practicable (a) uniform standards and procedures relating to fiscal, personnel, and other requirements common to two or more such programs, and (b) standards and procedures under which a state agency participating in more than one such program may submit a single plan and be subject to a single Federal fiscal and administrative review of the operation.

REORGANIZATION PLAN NO. 3 (1946)

Part I, Department of the Treasury.—*Section 101, Functions transferred to the United States Coast Guard.* (a) There were transferred to the Commandant of the Coast Guard the functions of the Bureau of Marine Inspection and Navigation, the functions of the Board of Supervising Inspectors, the Board of Local Inspectors, the Marine Casualty Investigation Board. The Boards named were abolished.

There were transferred from the Secretary of Commerce to the Commandant of the Coast Guard the functions which pertain to the approval of plans for the construction, repair, and alteration of vessels: approval of material, equipment, and appliances; classification of vessels; inspection of vessels and their equipment and appliances; issuance of certificates of inspection and of permits indicating the approval of vessels for operations which may be hazardous to life or property; administration of load line requirements; enforcement of other provisions for the safety of life and property on vessels; licensing and certification of officers, pilots, and seamen; suspension and revocation of licenses and certificates; investigation of marine casualties; enforcement of manning requirements; citizenship requirements, and requirements for the mustering and drilling of crews; control of log books; shipment, discharge, protection, and welfare of merchant seamen; enforcement of duties of shipowners and officers after accidents; promulgation and enforcement of rules for lights, signals, speed, steering, sailing, passing, anchorage, movement, and towlines of vessels and lights and signals on bridges; numbering of undocumented vessels; prescription and enforcement of regulations for outfitting and operation of motorboats; licensing of motorboat operators; regulation of regattas and marine parades; all other functions of such bureau offices and boards not specified in section 102 of the Plan, including remission of fines, penalties, and forfeitures under the laws governing these functions.

Section 102. There were transferred to the Commissioner of Customs those functions of the bureau, offices, and boards specified which pertain to the registry, enrollment, and licensing of vessels, including the issuance of commissions to yachts, the assignment of signal letters and the preparation of all reports and publications in connection therewith; measurement of vessels; administration of tonnage duties and collection of tolls; entry and clearance of vessels and aircraft, regulation of vessels in the coasting and fishing trades, and limitation of the use of foreign vessels in the waters under the jurisdiction of the United States; recording of sales, conveyances and mortgages of vessels; protection of steerage passengers; all other functions of such bureau, offices, and boards which were performed by the Bureau of Customs prior to the effective date of Executive Order No. 9033 of Feb. 28, 1942; and the power to remit and mitigate fines, penalties, and forfeitures incurred under the laws governing these functions.

Section 103. This section provides that the functions transferred by the Plan may be performed by such officers and employees of the Coast Guard and the Bureau of Customs as may be designated by the Commandant of the Coast Guard and the Commissioner of Customs respectively, and shall be performed subject to the control of the Secretary of the Treasury, except as otherwise required by law when the U. S. Coast

Guard is operated as part of the Navy.

Part II, Department of War and Department of the Navy.—*Section 201.* (a) The functions of St. Elizabeth's Hospital and the Superintendent, and of the Federal Security Agency and the Security Administrator with respect to the care, treatment and custody of insane persons were transferred or abolished as follows: 1. Functions with respect to insane persons belonging to the Army. or falling by reason of employment or service within the Army, were transferred to the Secretary of War. 2. Functions with respect to insane persons belonging to the Navy, or falling by reason of prior service within the Navy, were transferred to the Secretary of the Navy. The Marine Corps but not the Coast Guard is included in the Navy. 3. Functions with respect to insane persons belonging to the Coast Guard were abolished.

Part III. — *Section 301, Hydrographic Office and Naval Observatory.* The Hydrographic Office and the Naval Observatory, together with their respective functions, were transferred from the Bureau of Naval Personnel to the Chief of Naval Operations.

Section 302, Supply Department of the United States Marine Corps. The Paymaster's Department of the United States Marine Corps and the Quartermaster's Department of the United States and their functions were consolidated into a new agency known as the Supply Department of the United States Marine Corps. At the head of this Department is placed a Quartermaster General of the Marine Corps. The office and title of Paymaster General was abolished.

Part IV, Department of Interior. —*Section 401.* Certain functions with respect to the Franklin D. Roosevelt Library were transferred to the Secretary of Interior. (a) The functions of the Commissioner of Public Buildings with respect to the care, maintenance, and protection of the buildings and grounds of the Franklin D. Roosevelt Library. (b) The functions of the Archivist of the United States with respect to the collection of fees from persons visiting and viewing the exhibit rooms or museum portions of the library, excluding the fixing of charges to be collected but including the making of all other regulations with respect to such collection.

Section 402, Mineral Deposits in Certain Lands. The functions of the Secretary of Agriculture and the Department of Agriculture with respect to the uses of certain mineral deposits were transferred to the Secretary of the Interior, provided that the mineral development of such lands shall be authorized by the Secretary of the Interior only when advised by the Secretary of Agriculture that it does not interfere with the primary purpose for which the land was acquired and only in accordance with such conditions as may be specified by the Secretary of Agriculture in order to protect such purposes. The provisions of law governing the crediting and distribution of revenues derived from the said lands shall be applicable to revenues derived in connection with the functions transferred. To the extent necessary in connection with the performance of the functions transferred by this section, the Secretary of the Interior shall have access to the records of the Department of Agriculture relating to the lands affected.

Section 403, Bureau of Land Management. (a) The functions of the General Land Office and of the Grazing Service in the Department of the Interior were consolidated to form a new agency in the Department of the Interior known as the Bureau of Land Management. (b) There is placed at the head of the new Bureau a Director of the Bureau of Land Management appointed by the Secretary of Interior under the classified civil service who receives a salary of $10,000 per annum. (c) There are to be in the Bureau of Land Management an associate director and as many assistant directors as may be deemed necessary by the Secretary of the Interior. They are to be appointed by him under the classified civil service and subject to the Classified Act of 1923 as amended. (d) The General Land Office, Grazing Service, offices of Commissioner and Assistant Commissioner of the General Land Office, director and assistant director of the Grazing Service, all registers of the district land offices, United States Supervisor of Surveys, together with the Field Surveying Service, also known as the Cadastral Engineering Service, were abolished.

Part V. Department of Agriculture.—*Section 501.* The following functions were transferred to the Department of Agriculture: (a) All functions of the Agricultural Adjustment Administration and the Surplus Marketing Administration together with the respective heads of these administrations. (b) The administration of programs of the Federal Crop Insurance Corporation and the Commodity Credit Corporation.

Part VI. Department of Commerce.—*Section 601.* Certain functions of the Bureau of Standards were transferred to the Secretary of Commerce: (a) Those functions of the National Bureau of Standards which were performed by the Division of Commercial Standards of that bureau whose functions are (1) to assist, coordinate, and cooperate with groups of consumers, distributors or producers, technical organizations, and other persons, in the voluntary establishment, maintenance, recording, publishing, and promoting commercial standards as a nationally testing, grading, labeling, marketing, guaranteeing, or accepting stable, manufactured commodities moving in daily domestic and foreign trade, and (2) to assist in the development of Federal purchase standards, specifications, and in providing information to the public and the Government of such standards and specifications. (b) Those functions of the Bureau of Standards which were performed by the Division of Simplified Trade and Practises, namely, to assist, coordinate, and cooperate with individuals and groups of producers, distributors, and users in the establishment, recording, publishing, and promoting of a nationwide program for the elimination of avoidable waste through the formulation of simplified trade practise recommendations which identify and list sizes, types, dimensions, and varieties of products that are in national demand, including, but not limited, to such products as wood, textile, paper and rubber, mechanical, electrical, ceramic, construction materials, and metal and wood working tools.

Part VII.—The functions of the National Labor Relations Board with respect to secret ballots of employees on the question of an interruption of war production were abolished.

Part VIII. Smithsonian Institution.—The Board of Directors of the Canal Zone Biological Area was abolished and its functions transferred to the Smithsonian Institution.

Part IX. United States Employment Service.—The placement functions under the Selective Training and Service Act of 1940 were transferred to the U. S. Employment Service.

DIRECTOR OF LIQUIDATION

By Executive order of Jan. 4, 1946, there was established in the Office for Emergency Management of the Executive Office of the President a Director of Liquidation. The Director performs his functions in consultation with a Liquidation Advisory Committee. The Committee is composed of one representative of each of the following: Department of the Treasury, Surplus Property Administration, National Archives, Civil Service Commission, Public Buildings Administration, General Accounting Office, and Bureau of the Budget. The Chairman of the Advisory Committee is selected by the Director from the Committee's membership. The duties of the Director are to further proper preparations and methods for the orderly and timely winding up of the affairs of the temporary Federal agencies created for the purposes of the war.

UNITED STATES OF AMERICA TYPHUS COMMISSION

By order of Jan. 17, 1946, the United States of America Typhus Commission, which had been established in the War Department for the purpose of protecting the members of the armed forces from typhus fever and preventing its introduction into the United States, was directed to be liquidated. The liquidation of the affairs of the Commission and the disposition of the records and scientific data are to be accomplished under the direction of the Secretary of War.

CONSOLIDATION OF SURPLUS PROPERTY FUNCTIONS

By Executive order of Jan. 31, 1946, the functions of the Surplus Property Administrator and the Surplus Property Administration were transferred to the War Assets Corporation and merged in it. All functions of the Surplus Property Administration located outside of the continental United States, Hawaii, Alaska, Aleutians, Puerto Rico, and Virgin Islands were transferred to the Secretary of State and the State Department.

Effective March 26, 1946, there was established in the Office for Emergency Management of the Executive Offices of the President, a War Assets Administration at the head of which is an Administrator appointed by the President with the consent of the Senate. The functions of the War Assets Corporation relative to surplus property were transferred to the War Assets Administrator. There was transferred to the War Assets Administration as much as the Director of the Budget determined to relate primarily to surplus property, respectively of the records, administrative property, personnel and funds of the Surplus Property Administration, the Office of War Mobilization and Reconversion, the Reconstruction Finance Corporation, and the War Assets Corporation.

OFFICE OF ECONOMIC STABILIZATION

By Executive order of Feb. 21, 1946, the Office of Economic Stabilization, together with the Economic Stabilization Director, was reestablished with the same duties, functions, and powers as the one abolished Sept. 20, 1945. The Economic Stabilization Board was also reestablished on the former basis in the Office of Economic Stabilization. The Board was to have the following members: Economic Stabilization Director as Chairman, Secretary of the Treasury, Secretary of Agriculture, Secretary of Commerce, Secretary of Labor, Federal Loan Administrator, Chairman of the Board of Governors of the Federal Reserve System, Director of the Bureau of the Budget, Chairman of the Securities Exchange Commission, Price Administrator, Administrator of the National Housing Agency, Chairman of the National Wage Stabilization Board, and two representatives each of labor, management, and farmers to be appointed by the President.

AIR NAVIGATION FACILITIES

By Executive order of March 29, 1946, there were transferred to the Department of Commerce all functions, facilities, property, records, equipment, and maintenance supplies of the War and Navy Departments relating to the care, control, maintenance, and operation of air navigation, air traffic control, airway communication, and meteorological facilities of the U. S. Government, and all structures and equipment appurtenant thereto or used in connection therewith which are located in foreign territory and elsewhere outside of the continental limits of the United States are (a) determined by the War or Navy Departments to be no longer required for military purposes, (b) are determined by the Department of Commerce to be or likely to become useful in connection with the safe and efficient operation of United States civil aircraft in foreign air commerce, and can be continued in operation with funds available to the Department of Commerce.

The Department of Commerce, in carrying out the provisions of the order and to the extent permitted by law, was authorized to make, with the collaboration and approval of the State Department when the property is located in foreign territory. arrangements with the appropriate agencies of the respective foreign governments, or with an appropriate international agency, or with any air carrier or other suitable private agency, for the interim custody, operation, and maintenance of the facilities transferred to the Department of Commerce.

The Department of Commerce was authorized on behalf of the United States to accept funds from any foreign government or air carrier in payment for services rendered in the operation of the facilities transferred. Such funds shall be covered into the general fund of the Treasury. The provisions of this order are not applicable to any sea or air navigation facilities operated by the Coast Guard, nor to any functions of the Navy Department respecting such facilities.

TERMINATION OF OFFICE OF INTER-AMERICAN AFFAIRS

By Executive order of April 10, 1946, the Office of Inter-American Affairs was terminated and the following transferred to the Secretary of State: Institute of Inter-American Affairs, Inter-American Educational Foundation Inc., Institute of Inter-American Transportation, Inter-American Navigation Corporation, and Prencin-Radio Inc., together with all rights and interests, authority, and obligations of the Director and of his predecessors with respect to such corporations. All other functions of the Director were terminated. The Director was required to take such steps as might be necessary to effect the purposes of the order, including the turning over to the Secretary of State of the Capital stock of the named Corporations.

The duty of winding up all terminated facilities of the Office was turned over to the Secretary of State So much of the personnel as might be needed by the Department of State were to be retained. The rest were to be separated from the service or transferred to other government agencies.

PETROLEUM ADMINISTRATION FOR WAR

By Executive order of May 3, 1946, the Petroleum Administration for War was terminated. The Secretary of the Interior, acting through agencies of the Department of the Interior as he should designate, was directed to wind up the affairs of the Administration and to utilize therefor as much of the personnel, records, property, and funds of the Administration as might be necessary.

PRESIDENT'S RELIEF CONTROL BOARD

By Executive order of May 14, 1946, the President's Relief Control Board, which had been created July 15, 1942, was terminated. The Secretary of State was directed to liquidate all the activities and obligations as rapidly as practicable and to utilize therefor such personnel, property, records, and unexpended appropriations of the Board as might be necessary.

TRANSFER OF FISCAL FUNCTION OF LEND LEASE

By Executive order of May 17, 1946, all functions with respect to the maintenance of accounts and other fiscal records relating to lend lease and reverse lend lease were transferred to the Department of the Treasury to be administered under the direction of the Secretary of the Treasury. All other functions were to continue to be administered by the Department of State.

CABINET COMMITTEE ON PALESTINE

By reason of the urgency of the solution of the various problems relating to the displaced Jews in Europe and to Palestine there was established by Executive order of June 11, 1946, a cabinet committee on Palestine, composed of the Secretary of State, as chairman, the Secretary of War, and the Secretary of the Treasury. Its functions and duties were declared to be as follows: (a) to assist the President in the early consideration of the recommendations of the Anglo-American Committee of Inquiry, and of the views which may be submitted as a result of the consultations thereon as well as the determination of the steps to be taken by this Government in regard to Palestine and related problems; (b) To propose the specific measures considered necessary or appropriate effectively to implement the decisions made by the President in regard to Palestine and related problems; (c) So far as may be permitted by law to implement and coordinate, either directly or through the appropriate departments and agencies of the U. S. Government, such policies and programs as may be approved and authorized by the President; (d) To perform such other tasks in connection with the functions and duties described as the President may from time to time direct.

Each member of the Committee is required to designate a fully deputized alternate to act for and in his behalf. The alternates thus selected are to function as the executive agency of the committee and to be known as the Board of Alternates. whose chairman is the alternate for the Secretary of State.

WAR RELOCATION AUTHORITY

By Executive order of June 25, 1946, this agency, which had been established by Executive order March 18, 1942 and transferred to the Department of the Interior Feb. 16. 1944, was terminated as an organizational entity within the Department. The office of Director of War Relocation was abolished and the Secretary of the Interior was directed to wind up the affairs of the Authority.

CONTINUING FUNCTIONS OF OFFICE OF PRICE ADMINISTRATION

Although the Emergency Price Control Act of 1942 and the Stabilization Act of the same year were terminated as of June 30, 1946, by Executive order of that date, the Office Administration and the Price Administrator were directed to continue to exercise and perform all those functions, powers, and duties which did not terminate with the acts mentioned. These functions deal particularly with offenses committed or rights and liabilities incurred thereunder prior to the termination date.

DIPLOMATIC AND CONSULAR ESTABLISHMENTS IN THE PHILIPPINE ISLANDS

By Proclamation 2694 of July 8, 1946, the President of the United States designated all lands and buildings pertaining to the official residences of the United States High Commissioner of the Philippine Islands in the cities of Manila and Baguio, together with all fixtures and movable objects, to be Diplomatic and Consular Establishments of the United States. He directed the Secretary of State, on behalf of the United States, to enter suitable negotiations for the acquisition of title to any described properties, the title of which was not in the United States.

INDEPENDENCE OF PHILIPPINE ISLANDS

By another Proclamation of June 8, 1946, the Independence of the Philippine Islands was proclaimed to the world. The President was acting under an Act of Congress approved March 24, 1934, known as the Philippine Independence Act, which directed that on July 4, immediately following a ten-year transition period, the President should by proclamation withdraw and surrender all rights of possession, supervision, control, or sovereignty of the United States.

PHILIPPINE ALIEN PROPERTY CUSTODIAN

By Executive order of Oct. 14, 1946, there was established in the Office for Emergency Management of the Executive Offices of the President, the Philippine Alien Property Administration headed by an Administrator appointed without regard to the civil service laws. All authority, rights, privileges, powers, duties, and functions vested in the Office of Alien Property Custodian with respect to property located in the Philippines were transferred to the Philippine Alien Property Custodian.

TRANSFER OF AIR FACILITIES

By Executive order of Nov. 6, 1946, there were transferred to the Department of Commerce: (a) all facilities, property, equipment, and maintenance supplies of the War and Navy Departments relating to the care, control, maintenance and operation of air navigation facilities (including airports and associated airport facilities of the United States Government which (1) are located at points in Alaska and elsewhere outside the continental limits of the United States but not in foreign territory; (2) are determined by the War or Navy Departments to be no longer required for military purposes; (3) are determined by the Department of Commerce likely to become reasonably necessary in connection with the safe and efficient operation of the United States civil aircraft. All functions relating to the care, control, maintenance and operation of the facilities, property, and equipment were transferred to the Department of Commerce. The order does not cover those sea and air facilities now operated by the Coast Guard. In case of military necessity the Secretary of the Navy or of War shall have the right to take over immediately any facilities transferred, together with improvements thereto.

OFFICE OF TEMPORARY CONTROLS

By Executive order of Dec. 12, 1946, to effectuate the transition from war to peace and in the interest of the internal management of the Government, the following were consolidated to form one agency in the Office for Emergency Management in the Executive Office of the President: Office of War Mobilization and Reconversion, Office of Economic Stabilization, Office of Price Administration, and Civilian Production Administration. The new agency is known as the Office of Temporary Controls. There is at the head of the new office an Administrator who shall receive $12,000 unless Congress shall otherwise provide.

The functions of the Media Programming Division of the Motion Picture Division of the Office of War Mobilization and Reconversion and the functions which were transferred from the Bureau of Services of the Office of War Information to the Bureau of the Budget by order of Aug. 3, 1944, were transferred to the Office of Government Reports, which was reestablished as an agency in the Executive Office of the President.

ELECTIONS OF 1946

By Thomas N. Hoover*

Professor, Ohio University

REPUBLICAN CONTROL OF CONGRESS

Interest in the November elections was centered on the results as affecting the control of the 80th Congress which by an overwhelming majority passed to the Republican Party in the House of Representatives and by a safe majority in the Senate. The outcome came as no great surprise since the politically minded, as well as the rank and file of the voters, were aware that a widespread restlessness pervaded the atmosphere of the post-war period and that the inevitable repercussions of a devastating war of virtually worldwide scope made a change in the national political picture both probable and desirable on the theory that conditions could not be made worse by the change and might well be made better. In a sense, too, the time seemed ripe for final repudiation of what remained of the Rooseveltian New Deal. Also, the Democratic Party failed to present a completely united front for various reasons, among which may be cited the Third Term issue of five or six years past and the Communist-vote issue of the present.

---

* Grateful acknowledgment is hereby made to the Secretaries of State of the various states and to Mr. John Andrews, Clerk of the House of Representatives, whose cooperation has made the compilation of these statistics possible.

ALABAMA

Governor		
	James E. Folsom, Dem.	141,201
	Ward, Rep.	22,016
U. S. Senator		
	John Sparkman, Dem	163,217
Representatives		
1	Frank W. Boykin, Dem.	12,448
2	George M. Grant, Dem.	17,711
3	George Andrews, Dem.	13,397
4	Sam Hobbs, Dem.	16,299
	Roger S. Bingham, Rep.	2,207
5	Albert Rains, Dem.	21,560
6	Pete Jarman, Dem.	12,551
7	Carter Manasco, Dem.	22,853
	M. H. Woodard, Rep.	8,565
8	Robert E. Jones, Jr., Dem.	
	Arthur South, Rep.	1,453
9	Laurie C. Battle, Dem.	
	Luther Patrick, Dem.	

ARIZONA

Governor		
	Sidney P. Osborn, Dem.	73,595
	Bruck D. Brockett, Rep.	48,867
U. S. Senator		
	Ernest W. McFarland, Dem.	80,415
	Ward S. Powers, Rep.	35,022
	Morris Graham, Com.	802
Representatives (two elected at large)		
	Richard F. Harless, Dem.	71,836
	John R. Murdock, Dem.	74,948
	Denver C. Henson, Rep.	37,033
	John H. Curnutte, Rep.	36,185

ARKANSAS

Governor		
	Ben T. Laney, Dem.	128,029
	W. T. Mills, Rep.	24,133
Representatives		
1	E. C. Gathings, Dem.	20,250
2	Wilbur D. Mills, Dem.	22,955
3	J. W. Trimble, Dem.	24,950
4	Fadjo Cravens, Dem.	13,844
5	Brooks Hays, Dem.	21,777
	James R. Harris, Rep.	2,881
	Earl C. Dowder, Indep. Rep.	895
6	W. F. Norrell, Dem.	23,892
	M. O. Evans, Indep.	4,305
7	Oren Harris, Dem.	15,584

CALIFORNIA

Governor		
	Earl Warren, Rep., Dem.	2,344,542
	Henry R. Schmidt, Pro.	180,579
	Archie Brown	22,606
	James Roosevelt	3,210
U. S. Senator—long term		
	William F. Knowland, Rep.	1,428,067
	Will Rogers, Jr., Dem.	1,167,161
	Douglas Corrigan, Pro.	42,683
U. S. Senator—short term		
	William F. Knowland	425,273
	Will Rogers, Jr.	90,723
Representatives		
1	Clarence F. Lea, Dem., Rep.	77,653
2	Clair Engel, Dem., Rep.	57,895
3	Leroy Johnson, Rep., Dem.	116,792
4	Franck A. Havener, Dem.	60,655
	Truman R. Young, Rep.	54,113
5	Richard J. Welch, Rep., Dem.	94,293
6	George P. Miller, Dem., Rep.	118,548
7	John J. Allen, Jr., Rep.	61,508
	P. W. McDonough, Dem.	47,988
8	Jack Z. Anderson, Rep., Dem.	113,325
9	Bertrand W. Gearhart, Rep.	50,171
	Hubert Phillips, Dem.	43,244
10	A. J. Elliott, Dem., Rep.	51,843
11	Ernest K. Bramblett, Rep.	41,902
	George E. Outland, Dem.	36,996
12	Richard M. Nixon, Rep.	65,586
	H. J. Voorhis, Dem.	49,994
	John H. Hoeppell, Pro.	1,476
13	Norris Poulson, Rep.	48.071
	Ned R. Healy, Dem.	44,712
14	Helen Gahagan Douglas, Dem.	53,536
	F. M. Roberts, Rep.	44,914
15	Gordon L. McDonough, Rep., Dem.	106,020
16	Donald L. Jackson, Rep.	78,264
	Harold Harby, Dem.	45,951
	Ellis E. Patterson, write in	20,945
17	Cecil R. King, Dem., Rep.	110,654
18	Willis W. Bradley, Rep.	67,363
	Clyde Doyle, Dem.	60,218
19	Chet Holifield, Dem., Rep.	50,666
	M. J. Morrill, write in	1,248
20	Carl Hinshaw, Rep.	98,283
	E. G. Burkhalter, Dem.	67,317
21	Harry R. Sheppard, Dem.	37,229
	Lowell E. Lathrop, Rep.	33,395
22	John Phillips, Rep.	59,935
	Ray Adkinson, Dem.	36,649
23	Charles K. Fletcher, Rep.	69,411
	Ed V. Izac, Dem.	53,898

COLORADO

Governor		
	William Lee Knous, Dem.	174,604
	Leon E. Livingston, Rep.	160,483
Representatives		
1	John A. Carroll, Dem.	80,515
	Dean M. Gillespie, Rep.	55,724
	Edgar P. Sherman, Soc.	891
2	William S. Hill, Rep.	54,768
	Frank A. Safranek, Dem.	27,393
	Benjamin E. O'Brien, Ind.	710
	William E. Randall, Soc.	460
3	J. Edgar Chenoweth, Rep.	45,043
	Walter W. Johnson, Dem.	37,496
4	Robert F. Rockwell, Rep.	28,894
	Thomas Matthews, Dem.	20,290

CONNECTICUT

Governor		
	James L. McConaughy, Rep.	371,852
	Snow, Dem.	276,335
U. S. Senator—short term		
	Raymond E. Baldwin, Rep.	378,707
	Wilbur R. Cross, Dem.	278,188
	F. C. Smedley, Soc.	22,164
U. S. Senator—full term		
	Raymond E. Baldwin, Rep.	381,328
	Joseph M. Tone, Dem.	276,424
	F. C. Smedley, Soc.	22,013
	John W. Aiken, Soc.-Lab.	3,156

Representatives

	(At large)	
	Antony N. Sadlak, Rep.	377,972
	J. F. Ryter, Dem.	277,872
	R. C. Smith, Soc.	22,521
	M. A. Russo, Com.	1,401
1	William J. Miller, Rep.	93,006
	Herman P. Kopplemann, Dem.	82,231
2	Horace Seely-Brown, Rep.	59,828
	Chase Going Woodhouse, Dem.	48,376
3	Ellsworth B. Foote, Rep.	76,408
	James P. Geelan, Dem.	53,404
4	John Davis Lodge, Rep.	93,513
	Henry A. Mucci, Dem.	57,913
	Stanley W. Mayhew, Soc.	9,427
	William W. Sullivan, Indep. Voters	2,834
5	James T. Patterson, Rep.	51,790
	Thomas Radzevich, Dem.	39,785
	John C. Cluney, Soc.	5,854
	John C. Cluney, Taxpayers Good Gov.	130

DELAWARE

U. S. Senator

	John J. Williams, Rep.	62,603
	James M. Tunnell, Dem.	50,910

Representatives

	J. Caleb Boggs, Rep.	63,516
	Philip A. Traynor, Dem.	49,105

FLORIDA

U. S. Senator

	Spessard L. Holland, Dem.	156,232
	J. Harry Schad, Rep.	42,408

Representatives

1	J. Hardin Peterson, Dem.	31,145
2	Emory H. Price, Dem.	26,093
3	Robert L. F. Sikes, Dem.	18,455
4	George A. Smathers, Dem.	37,002
	Norman N. Curtis, Rep.	14,458
5	Joe Hendricks, Dem.	24,695
	M. J. Moss, Jr., Rep.	15,591
6	Dwight L. Rogers, Dem.	13,733
	Joseph P. Moe, Rep.	5,591

GEORGIA

Governor

	Eugene Talmadge, Dem.	172,588

Representatives

1	Prince H. Preston, Dem.	20,937
	H. W. Sheppard, Indep.	27
2	E. E. Cox, Dem.	10,805
3	Stephen Pace, Dem.	8,961
4	A. Sidney Camp, Dem.	8,476
5	James C. Davis, Dem.	31,444
	Helen Douglas Mankin, Indep.	19,527
	Henry A. Alexander, Indep.	24
6	Carl Vinson, Dem.	13,566
7	Henderson Lanham, Dem.	7,573
8	W. M. (Don) Wheeler, Dem.	8,986
9	John S. Wood, Dem.	14,815
10	Paul Brown, Dem.	16,398

IDAHO

Governor

	C. A. Robins, Rep.	102,233
	Arnold Williams, Dem.	79,131

U. S. Senator

	Henry C. Dworshak, Rep.	105,523
	George E. Donart, Dem.	74,629

Representatives

1	Abe McGregor Goff, Rep.	37,326
	Compton I. White, Dem.	35,509
2	John Sanborn, Rep.	63,692
	Pete Leguineche, Dem.	41,231

ILLINOIS

Representatives

	(At large)	
	William G. Stratton, Rep.	1,906,717
	Emily Taft Douglas, Dem.	1,539,248
	Elizabeth Stephens Carr, Pro.	12,917
1	William L. Dawson, Dem.	38,040
	William E. King, Rep.	28,945
2	Richard B. Vail, Rep.	156,697
	William A. Rowan, Dem.	148,995
3	Fred E. Busbey, Rep.	169,543
	Edward A. Kelly, Dem.	126,638
4	Martin Gorski, Dem.	68,113
	John T. Parsons, Rep.	28,251
5	Adolph J. Sabath, Dem.	34,904
	Michael A. Francisco, Rep.	13,859
6	Thomas J. O'Brien, Dem.	171,778
	Harold C. Woodward, Rep.	158,702
7	Thomas L. Owens, Rep.	252,981
	William W. Link, Dem.	206,963
8	Thomas S. Gordon, Dem.	38,317
	Scott John Vitell, Rep.	11,266
9	Robert J. Twyman, Rep.	54,615
	Alexander J. Resa, Dem.	51,788
10	Ralph E. Church, Rep.	201,010
	Harold H. Kolbe, Dem.	109,712
11	Chauncey W. Reed, Rep.	120,640
	Louis William Oswald, Dem.	40,355
12	Noah M. Mason, Rep.	73,431
	Richard G. Myrland, Dem.	32,816
13	Leo E. Allen, Rep.	48,238
	Michael M. Kinney, Dem.	13,767
14	Anton J. Johnson, Rep.	45,723
	Carl E. Wright, Jr., Dem.	27,877
15	Robert B. Chiperfield, Rep.	49,895
	Henry D. Sullivan, Dem.	27,667
16	Everett M. Dirksen, Rep.	64,534
	Hans A. Spading, Dem.	31,091
17	Leslie C. Arends, Rep.	45,969
	Carl Vrooman, Dem.	18,617
18	Edward H. Jenison, Rep.	56,537
	C. E. Spang, Dem.	30,305
19	Rolla C. McMillen, Rep.	64,063
	Olive Remington Goldman, Dem.	38,485
20	Sid Simpson, Rep.	34,923
	Don Irving, Dem.	24,508
21	Evan Howell, Rep.	55,609
	Roscoe Bonjean, Dem.	45,293
22	Melvin Price, Dem.	69,669
	Calvin D. Johnson, Rep.	67,665
23	Charles W. Vursell, Rep.	51,440
	Homer Kasserman, Dem.	42,237
24	Roy Clippinger, Rep.	37,909
	Edward Hines, Dem.	26,483
25	C. W. (Runt) Bishop, Rep.	53,831
	Sherman S. Carr, Dem.	36,217

INDIANA

U. S. Senator

	Wm. E. Jenner, Rep.	739,809
	M. C. Townsend, Dem.	584,288
	E. D. Riggs, Pro.	21,008
	J. M. Morris, Soc.-Lab.	1,523
	E. G. Johnson, Com.	806

Representatives

1	Ray J. Madden, Dem.	51,809
	Charles W. Gannon, Rep.	46,677
	Hubert F. Jackson, Pro.	833
	Harvey E. Taylor, Soc.-Lab.	475
2	Charles A. Halleck, Rep.	66,423
	Margaret A. Afflis, Dem.	40,847
	F. W. Lowe, Pro.	1,047
3	Robert A. Grant, Rep.	73,239
	John S. Gonas, Dem.	57,425
	Wm. Oesch, Pro.	1,064

4	George W. Gillie, Rep.	59,790
	Walter E. Frederick, Dem.	39,766
	George W. Holston, Pro.	1,111
5	Forest A. Harness, Rep.	79,752
	William W. Welsh, Dem.	61,364
	A. W. Snyder, Pro.	3,820
6	Noble J. Johnson, Rep.	65,926
	Thomas A. Sigler, Dem.	47,972
	John R. Sheets, Pro.	1,035
7	Gerald W. Landis, Rep.	63,667
	James E. Noland, Dem.	59,908
	Robert Gemmer, Pro.	2,086
8	E. A. Mitchell, Rep.	66,050
	Winfield K. Denton, Dem.	60,385
	C. Dana Malpass, Pro.	1,185
9	Earl Wilson, Rep.	58,384
	Oliver O. Dixon, Dem.	45,321
	Garnet Jewell, Pro.	945
10	Raymond S. Springer, Rep.	70,969
	Frank C. Unger, Dem.	44,807
	Carl W. Thompson, Pro.	3,913
11	Louis Ludlow, Dem.	79,040
	Albert J. Beveridge, Rep.	74,745
	Marion Gatlin, Pro.	868

IOWA

Governor

	Robert D. Blue, Rep.	362,282
	Miles, Dem.	264,152

Representatives

1	T. E. Martin, Rep.	52,488
	Clair Williams, Dem.	32,849
2	Henry O. Talle, Rep.	60,111
	Bernhart, Dem.	41,544
3	John W. Gwynne, Rep.	48,346
	Ryan, Dem.	29,661
4	Karl LeCompte, Rep.	43,753
	Augustine, Dem.	31,203
5	Paul Cunningham, Rep.	41,679
	Browner, Dem.	28,490
6	James J. Dolliver, Rep.	40,640
	Johnson, Dem.	23,422
7	Ben F. Jensen, Rep.	40,152
	Allen, Dem.	23,567
8	Charles Hoeven, Rep.	37,868
	Heikens, Dem.	17,303

KANSAS

Governor

	Frank Carlson, Rep.	309,064
	Harry H. Woodring, Dem.	242,101

Representatives

1	Albert M. Cole, Rep.	63,076
	James W. Lowry, Dem.	35,045
2	Errett P. Scrivner, Rep.	56,363
	Murray H. Hodges, Dem.	39,484
3	Herbert A. Meyer, Rep.	41,624
	Jo E. Gaitskill, Dem.	33,578
4	Edward H. Rees, Rep.	68,658
	William P. Warren, Dem.	53,617
5	Clifford R. Hope, Rep.	54,578
	Arthur L. Sparks, Dem.	32,538
6	Wint Smith, Rep.	44,343
	G. E. Bengtson, Dem.	28,911
	C. Floyd Hester, Pro.	3,045

KENTUCKY

U. S. Senator

	John S. Cooper, Rep.	327,652
	John Y. Brown, Dem.	285,829
	W. A. Sandefur, Soc.	1,638

Representatives

1	Noble J. Gregory, Dem.	32,121
	Wm. E. Porter, Rep.	16,064
	Joseph S. Freeland, Soc.	320
2	Earle C. Clements, Dem.	38,020
	Thomas W. Hines, Rep.	29,124
3	Thruston B. Morton, Rep.	61,899
	Emmet O'Neal, Dem.	44,599
4	Frank L. Chelf, Dem.	33,116
	Don V. Drye, Sr., Rep.	29,304
5	Brent Spence, Dem.	26,444
	Marion W. Moore, Rep.	25,240
6	Virgil Chapman, Dem.	43,176
	W. P. Rogers, Rep.	35,368
7	W. Howes Meade, Rep.	30,070
	A. J. May, Dem.	20,596
8	Joe B. Bates, Dem.	33,408
	Ray Schmauch, Rep.	30,127
9	John M. Robsion, Rep.	54,306

LOUISIANA

Representatives

1	F. Edward Hebert, Dem.	29,329
	Dennison Suarez, Rep.	2,614
2	Hale Boggs, Dem.	29,457
	Harold M. Herbst, Rep.	3,037
3	James Domengeaux, Dem.	4,595
4	Overton Brooks, Dem.	8,499
5	Otto E. Passman, Dem.	6,049
6	James H. Morrison, Dem.	8,781
7	Henry D. Larcade, Jr., Dem.	5,907
8	A. Leonard Allen, Dem.	7,740

MAINE

Governor

	Horace A. Hildreth, Rep.	110,327
	F. Davis Clark, Dem.	69,624

U. S. Senator

	Owen Brewster, Rep.	111,215
	Peter M. MacDonald, Dem.	63,799

Representatives

1	Robert Hale, Rep.	38,975
	John C. Fitzgerald, Dem.	26,378
2	Margaret Chase Smith, Rep.	39,791
	Edward J. Beauchamp, Dem.	25,739
3	Frank Fellows, Rep.	31,622
	John M. Coghill, Dem.	11,743

MARYLAND

Governor

	William P. Lane, Jr., Dem.	268,084
	Theodore R. McKeldin, Rep.	221,752

U. S. Senator

	Herbert R. O'Conor, Dem.	237,232
	David John Markey, Rep.	235,000

Representatives

1	Edward T. Miller, Rep.	27,364
	Dudley G. Roe, Dem.	26,360
2	Hugh A. Meade, Dem.	69,211
	David G. Harry, Rep.	62,760
3	Thomas D'Alesandro, Jr., Dem.	24,347
	Edward N. Kowzan, Rep.	13,761
4	George H. Fallon, Dem.	31,453
	Paul Robertson, Rep.	23,499
5	Lansdale G. Sasscer, Dem.	40,929
	Edwin A. Glenn, Rep.	29,406
6	J. Glenn Beall, Rep.	55,667
	Arch McDonald, Dem.	40,198

MASSACHUSETTS

Governor

	Robert F. Bradford, Rep.	911,152
	Maurice J. Tobin, Dem.	762,743
	Horace I. Hillis, Soc.-Lab.	7,140
	Guy S. Williams, Pro.	2,408

U. S. Senator

	Henry Cabot Lodge, Jr., Rep.	989,736
	David I. Walsh, Dem.	660,200
	Henning A. Blomen, Soc.-Lab.	9,221
	Mark R. Shaw, Pro.	2,898

Representatives

1	John W. Heselton, Rep.	59,222
	John J. Falvey, Dem.	40,549
	Chester M. Delf, Pro.	2,278
2	Charles R. Clason, Rep.	59,754
	Foster Furcolo, Dem.	56,459
3	Philip J. Philbin, Dem.	69,038
	Carroll H. Balcom, Rep.	42,033
4	Harold D. Donohue, Dem.	59,847
	Pehr G. Holmes, Rep.	58,663
	Oliver M. Frazer, Pro.	2,415
5	Edith Nourse Rogers, Rep.	98,488
	Oliver S. Allen, Dem.	38,575
	Harriet Salde, Pro.	486
6	George J. Bates, Rep.	79,709
	Richard B. O'Keefe, Dem.	33,823
7	Thomas J. Lane, Dem.	59,871
	Ernest Bentley, Rep.	37,250
	Freeman W. Follett, Pro.	1,433
8	Angier L. Goodwin, Rep.	76,305
	Anthony M. Roche, Dem.	43,827
9	Charles L. Gifford, Rep.	69,831
	William McAuliffe, Dem.	43,367
	Grace Farnsworth Luder, Pro.	1,601
10	Christian A. Herter, Rep.	96,607
	Paul J. McCarty, Dem.	54,421
11	John F. Kennedy, Dem.	69,093
	Lester W. Bowen, Rep.	26,007
	Philip Geer, Pro.	1,036
12	John W. McCormack, Dem.	92,622
13	Richard B. Wigglesworth, Rep.	87,839
	James J. Goode, Jr., Dem.	42,274
14	Joseph W. Martin, Jr., Rep.	71,566
	Martha Sharp, Dem.	40,999

MICHIGAN

Governor

Kim Sigler, Rep.	1,003,878
M. D. Van Wagoner, Dem.	644,540
Gordon Phillips, Pro.	11,974
James Sim, Soc.-Lab.	5,071

U. S. Senator

Arthur H. Vandenberg, Rep.	1,085,570
James H. Lee, Dem.	517,923
Lawrence A. Ruble, Pro.	8,109
T. A. Grove, Soc.-Lab.	4,572
Hugo Beiswenger, Com.	2,546

Representatives

1	George G. Sadowski, Dem.	57,753
	John B. Sosnowski, Rep.	29,293
	Charles L. Dawson, Pro.	583
2	Earl C. Michener, Rep.	66,486
	William R. Kelley, Dem.	26,141
	Clarence DeCan, Pro.	659
	Robert Cummins, Com.	142
3	Paul W. Shafer, Rep.	59,823
	Herschel W. Carney, Dem.	25,914
	D. D. Gibbons, Pro.	1,050
4	Clare E. Hoffman, Rep.	58,798
	Harvey Hope Jarvis, Dem.	21,514
	Ralph C. March, Pro.	849
5	Bartel J. Jonkman, Rep.	63,093
	Earle W. Reynolds, Dem.	25,022
6	William W. Blackney, Rep.	69,203
	Arthur Elliott, Dem.	50,684
	William H. Morford, Pro.	794
7	Jesse P. Wolcott, Rep.	64,404
	Earl J. Tallman, Dem.	21,708
	Harry Wing, Pro.	634
8	Fred L. Crawford, Rep.	58,725
	J. Charles Mottashed, Dem.	21,375
	H. T. Green, Pro.	820
9	Albert J. Engel, Rep.	49,017
	J. Willard Krause, Dem.	18,828
	Walker M. Jordan, Pro.	460
10	Roy O. Woodruff, Rep.	44,853
	Herman N. Butler, Dem.	17,737
	Floyd Seiter, Pro.	447
11	Fred Bradley, Rep.	41,436
	Cecil W. Bailey, Dem.	21,340
	Charles Swanson, Pro.	134
12	John B. Bennett, Rep.	40,717
	Frank E. Hook, Dem.	33,799
	August Larson, Pro.	309
13	Howard A. Coffin, Rep.	50,539
	George D. O'Brien, Dem.	44,883
	O. Lon Chaney, Pro.	330
14	Harold F. Youngblood, Rep.	69,968
	Louis C. Rabaut, Dem.	60,808
	A. L. Leach, Pro.	450
15	John D. Dingell, Dem.	59,111
	Harry Henderson, Rep.	54,296
	Selden D. Kelley, Pro.	425
16	John Lesinski, Dem.	57,773
	Albert A. Riddering, Rep.	52,376
	E. A. Johnson, Pro.	653
	William Allan, Com.	471
17	George A. Dondero, Rep.	102,336
	John W. L. Hicks, Dem.	54,928
	Don Taylor, Pro.	827

MINNESOTA

Governor

Luther W. Youngdahl, Rep.	519,067
Harold H. Barker, Dem., F-L.	349,565
Rudolph Gustafson, Indust. Gov.	11,716

U. S. Senator

Edward J. Thye, Rep.	517,775
Theodore Jorgensen, Dem., F-L.	349,520
Grace Carlson, Rev. Workers.	11,421

Representatives

1	August H. Andresen, Rep.	65,906
	Karl F. Rolvaag, Dem., F-L.	30,439
2	Joseph P. O'Hara, Rep.	69,487
	L. J. Kilbride, Dem., F-L.	21,947
3	George MacKinnon, Rep.	57,397
	Roy W. Wier, Dem., F-L.	52,797
	Warren Creel	1,325
4	Edward J. Devitt, Rep.	45,667
	Frank T. Starkey, Dem., F-L.	41,897
	Dorothy Schultz	1,138
5	Walter H. Judd, Rep.	66,837
	Douglas Hall, Dem., F-L.	47,777
6	Harold Knutson, Rep.	55,401
	J. Edward Anderson, Dem., F-L.	41,147
7	H. Carl Andersen, Rep.	57,869
	Donald M. Lawson, Dem., F-L	30,667
8	John A. Blatnik, Dem., F-L.	62,876
	William A. Pittenger, Rep.	46,189
9	Harold C. Hagen, Rep.	50,031
	Verner Nelson, Dem., F-L.	28,211

MISSISSIPPI

U. S. Senator

Theodore G. Bilbo, Dem.	46,747

Representatives

1	John E. Rankin, Dem.	5,429
2	Jamie L. Whitten, Dem.	6,491
3	William M. Whittington, Dem.	4,185
4	Thomas G. Abernethy, Dem.	10,017
5	Arthur Winstead, Dem.	7,122
6	William M. Colmer, Dem.	6,448
7	John Bell Williams, Dem.	10,345

MISSOURI

U. S. Senator

James P. Kem, Rep.	572,556
Frank P. Briggs, Dem.	511,544

Representatives

1	Wat Arnold, Rep.	37,584
	Walter G. Stillwell, Dem.	37,105
2	Max Schwabe, Rep.	44,292
	Will L. Nelson, Jr., Dem.	42,437
3	William C. Cole, Rep.	38,828
	William Orr (Tom) Sawyers, Dem.	34,730
4	C. Jasper Bell, Dem.	41,843
	Vernon D. Fulcrut, Rep.	34,066
5	Albert L. Reeves, Jr., Rep.	42,065
	Enos A. Axtell, Dem.	36.324
6	Marion T. Bennett, Rep.	54,034
	Tom B. Hembree, Dem.	38,113
7	Dewey Short, Rep.	50,588
	Don Ervin, Dem.	26,712
8	Parke M. Banta, Rep.	42,076
	A. S. J. Carnahan, Dem.	40,241
9	Clarence Cannon, Dem.	35,253
	William Barton, Rep.	30,199
10	Orville Zimmerman, Dem.	37,236
	Walter K. Dillon, Rep.	24,164
11	Claude I. Bakewell, Rep.	41,202
	John B. Sullivan, Dem.	39,879
12	Walter C. Ploeser, Rep	93,136
	Henry W. Simpson, Dem.	66,878
13	Frank M. Karsten, Dem.	41,229
	Alfred L. Grattendick, Rep.	34,062

MONTANA

U. S. Senator

Zales N. Ecton, Rep.	101,901
Leif Erickson, Dem.	86,476
Floyd P. Jones, Soc.	2,189

Representatives

1	Mike Mansfield, Dem.	47,418
	Walter R. (Barney) Rankin, Rep.	34,958
2	Wesley A. D'Ewart, Rep.	58,307
	John J. Holmes, Dem.	48,564
	Edgar M. Spriggs, Soc.	841

NEBRASKA

Governor

Val Peterson, Rep.	249,468
Frank Sorrell, Dem.	131,367

U. S. Senator

Hugh Butler, Rep.	271,208
John E. Mekota, Dem.	111,751

Representatives

1	Carl T. Curtis, Rep.	73,602
	Wm. H. Meier, Dem.	37,280
2	Howard Buffett, Rep.	53,398
	Frank A. Jelen, Dem.	38,125
3	Karl Stefan, Rep.	64,016
	Hans O. Jensen, Dem.	20,161
	Paul Burke (by petition)	4,516
4	A. L. Miller, Rep.	57,708
	Stanley D. Long, Dem.	23,234

NEVADA

Governor

Vail Pittman, Dem.	28,655
M. E. Jepson, Rep.	21,247

U. S. Senator

George W. Malone, Rep.	27,801
Berkeley Bunker, Dem.	22,553

Representatives

Charles H. Russell, Rep.	28,859
Malcolm McEachin Dem.	20,187

NEW HAMPSHIRE

Governor

Charles M. Dale, Rep.	103,204
F. Clyde Keefe, Dem.	60,247

Representatives

1	Chester E. Merrow, Rep.	53,909
	Josaphet T. Benoit, Dem.	36,316
2	Norris Cotton, Rep.	45,963
	Patrick J. Hinchey, Dem.	24,904

NEW JERSEY

Governor

Alfred E. Driscoll, Rep.	807,378
Lewis G. Hansen, Dem.	585,960
Alan Kohlman, Soc. Workers	9,823
Robert Gittings, Anti-Med. Trust	2,108
John Binns, Nat. Pro.	1,425
R. Smith, Soc.	2,326
G. E. Bopp, Soc.-Lab.	1,476
L. Mahan, Com.	4,031

U. S. Senator

H. Alexander Smith, Rep.	799,808
George E. Brunner, Dem.	548,458
G. W. Ridout, Pro.	1,711
J. C. Butterworth, Soc.-Lab.	7,675
George Breitman, Soc. Workers	4,976
Arthur Riley, Soc.	2,226
F. W. Collins, Anti-Med. Trust	1,676
M. M. Jones, Ind. Am.	625

Representatives

1	Charles A. Wolverton, Rep.	82,919
	G. F. Neutze, Dem.	47,631
2	T. Millet Hand, Rep.	54,511
	E. T. Keeley, Dem.	26,740
3	James C. Auchincloss, Rep.	70,302
	J. W. Zimmerman, Dem.	36,177
	W. V. Timberman, Justice, Decency, Independence	1,865
4	Frank A. Mathews, Jr., Rep.	50,221
	C. R. Howell, Dem.	45,225
5	Charles A. Eaton, Rep.	69,338
	J. J. George, Dem.	43,593
	C. K. Ely, Nat. Pro.	159
6	Clifford P. Case, Rep.	69,395
	W. H. Van Hoesen, Dem.	35,378
	Robert Ensel, Com.	863
	Margaret C. Lowe, Nat. Pro.	1,623
7	J. P. Thomas, Rep.	65,426
	R. B. Meyner, Dem.	29,418
8	Gordon Canfield, Rep.	57,616
	J. V. Breslin, Dem.	23,007
	N. Liss, Com.	395
	H. T. Lun, Soc.-Lab.	304
	Peter J. Toth, No Foreign Loans	396
9	Harry L. Towe, Rep.	74,870
	J. M. Mehler, Dem.	33,553
10	Fred A. Hartley, Jr., Rep.	44,619
	P. W. Rodino, Jr., Dem.	38,889
	Louise K. Leach, Nat. Pro.	1,140
	M. D. Bluestone, Soc.	380
11	Frank L. Sundstrom, Rep.	46,034
	R. F. J. McGarry, Dem.	28,545
	Gertrude L. Riger, Soc.	1,198
	Wesley U. Morris, Nat. Pro.	141
	Wm. E. Bohannon, Soc. Workers	299
12	Robert W. Kean, Rep.	55,732
	R. C. Connell, Dem.	30,389
	Alice Ostrow, Soc.	1,377
	Wm. H. Farrell, Nat. Pro.	170
13	Mary T. Norton, Dem.	69,440
	John A. Jones, Rep.	36,270
	Wm. S. Dowd, "$250 State Bonds"	115
	Arlene Phillips, Soc. Workers	1,637
	Sol Potegol, Com.	307
14	Edward J. Hart, Dem.	65,979
	Edward P. Nicolay, Rep.	38,008
	Joseph Fischer, Com.	399

NEW MEXICO

Governor		
	Thomas J. Mabry, Dem.	70,055
	Edward L. Safford, Rep.	62,875
U. S. Senator		
	Dennis Chavez, Dem.	68,650
	Patrick J. Hurley, Rep.	64,633
Representatives (two at large)		
	Antonio M. Fernandez, Dem.	65,242
	Georgia L. Lusk, Dem.	66,420
	Earl Douglas, Rep.	60,519
	Herman G. Baca, Rep.	58,938

NEW YORK

Governor		
	Thomas E. Dewey, Rep.	2,825,633
	James M. Mead, Dem., Am. Lab., Lib.	2,138,482
U. S. Senator		
	Irving M. Ives, Rep.	2,559,365
	Herbert H. Lehman, Dem., Am. Lab., Lib.	2,308,112
Representatives		
1	W. Kingsland Macy, Rep.	83,877
	Eugene T. O'Neill, Dem., Am. Lab.	24,647
2	Leonard W. Hall, Rep.	123,873
	Josephine U. Mayes, Dem., Am. Lab.	34,217
3	Henry J. Latham, Rep.	98,722
	Aloysius J. Maickel, Dem.	32,002
	Herbert Shingler, Am. Lab.	6,763
	William L. Munger, Lib.	4,100
4	Gregory McMahon, Rep.	57,176
	Emily B. Barry, Dem.	38,227
	George H. Rooney, Am. Lab.	7,439
	Nash Starr, Lib.	4,436
5	Robert Tripp Ross, Rep.	66,754
	James J. Delaney, Dem., Am. Lab.	59,092
6	Robert Nodar, Jr., Rep.	59,438
	James J. Delaney, Dem., Am. Lab., Lib.	50,944
7	James J. Delaney, Dem., Am. Lab., Lib.	49,449
	Roy M. D. Richardson, Rep.	36,510
8	Joseph L. Pfeifer, Dem., Am. Lab.	34,876
	Paul W. Williams, Rep.	29,851
9	Eugene J. Keogh, Dem., Lib.	41,304
	Samuel R. Scialabba, Rep.	27,289
	Anthony Scimeca, Am. Lab.	16,359
10	Andrew L. Somers, Dem.	57,658
	Victor Wichum, Rep.	33,642
	August Claessens, Lib.	8,314
11	James J. Heffernan, Dem., Am. Lab., Lib.	69,089
	Alfred C. McKenzie, Rep.	45,279
12	John J. Rooney, Dem.	36,399
	Vincent J. Longhi, Rep., Am. Lab.	31,052
13	Donald L. O'Toole, Dem., Am. Lab.	51,406
	Charles H. Weadon, Rep.	44,674
14	Leo F. Rayfiel, Dem., Am. Lab., Lib.	79,336
	Robert H. Thayer, Rep.	26,450
15	Emanuel Celler, Dem., Am. Lab., Lib.	78,543
	Lauri T. Laisi, Rep.	21,094
	Max Schachtman, Workers	165
16	Ellsworth B. Buck, Rep., Vet., Victory	49,758
	John Burry, Dem.	31,583
17	Frederic R. Coudert, Jr., Rep.	66,063
	Myron Sulzberger, Jr., Dem.	39,216
	Joseph Clark Baldwin, Am. Lab.	9,527
18	Vito Marcantonio, Dem., Am. Lab.	42,229
	Frederick V. P. Bryan, Rep.	35,693
19	Arthur G. Klein, Dem., Am. Lab.	48,437
	William I. Lehrfeld, Rep.	19,410
20	Sol Bloom, Dem., Am. Lab.	57,208
	Jules J. Justin, Rep.	36,450
21	Jacob K. Javits, Rep., Lib.	46,897
	Daniel Flynn, Dem.	40,652
	Eugene P. Connolly, Am. Lab.	14,349
22	Adam C. Powell, Dem., Am. Lab.	32,573
	Grant Reynolds, Rep.	19,514
23	Walter A. Lynch, Dem.	52,616
	Peter Wynne, Rep.	30,534
	David A. Schlossberg, Am. Lab.	25,229
	William Macks, Lib.	12,803
24	Benjamin J. Rabin, Dem.	39,316
	Roy Soden, Am. Lab.	24,249
	David Scher, Rep.	16,931
	Bennie Bendick, Lib.	8,504
25	Charles A. Buckley, Dem.	47,142
	Charles Garside, Rep.	46,853
	Edward V. Morand, Am. Lab.	25,353
	Ira J. Palestine, Lib.	15,814
	John A. Dewey, J. Veterans	9,791
26	David M. Potts, Rep.	58,061
	Peter A. Quinn, Dem.	49,067
	Gerald O'Reilly, Am. Lab.	17,379
	Augustus Batten, Lib.	7,140
27	Ralph W. Swinn, Rep.	84,882
	Francis X. Nulty, Dem., Am. Lab.	38,950
28	Ralph A. Gamble, Rep.	83,533
	Morris Karnes, Dem., Am. Lab.	27,236
29	Katherine St. George, Rep.	60,769
	James K. Welsh, Dem., Vet.-Farmer	40,174
	Bryce Oliver, Am. Lab.	3,549
30	Jay LeFevre, Rep.	80,469
	John F. Killgrew, Dem., Am. Lab.	35,240
31	Bernard W. Kearney, Rep.	66,395
	Carroll A. Gardner, Dem., Am. Lab.	45,777
32	William T. Byrne, Dem., Am. Lab.	79,042
	William K. Sanford, Rep.	64,325
33	Dean P. Taylor, Rep.	89,778
	David J. Fitzgerald, Dem., Am. Lab.	38,666
34	Clarence E. Kilburn, Rep.	64,217
	William G. Houk, Dem.	22,368
	Carl H. Bogardus, Am. Lab.	1,384
35	Hadwen C. Fuller, Rep.	58,040
	Frank A. Emma, Dem., Am. Lab.	48,854
36	R. Walter Riehlman, Rep.	76,372
	Lawson Barnes, Dem., Am. Lab.	44,371
37	Edwin Arthur Hall, Rep.	59,920
	Charles R. Wilson, Dem., Am. Lab.	23,687
38	John Taber, Rep.	63,382
	George T. Franklin, Dem.	24,576
39	W. Sterling Cole, Rep.	61,330
	William Heidt, Jr., Dem., Am. Lab.	23,205
40	Kenneth Keating, Rep.	84,852
	George F. Rogers, Dem., Am. Lab.	55,321

41	James W. Wadsworth, Rep.	65,975
	Charles J. Reap, Dem., Am. Lab.	26,332
42	Walter G. Andrews, Rep.	71,862
	William R. Lupton, Dem., Am. Lab.	43,028
43	Edward J. Elsaesar, Rep.	71,758
	Charles P. McCabe, Dem.	38,108
	George J. Young, Am. Lab.	4,853
44	John C. Butler, Rep.	67,495
	James B. Downie, Dem., Am. Lab.	49,798
45	Daniel A. Reed, Rep.	53,327
	Joseph H. Proudman, Dem., Am. Lab.	20,205
	Carl W. Lundberg, Veterans Victory	2,208

NORTH CAROLINA

Representatives

1	Herbert C. Bonner, Dem.	9,993
	Zeno O. Ratcliff, Rep.	1,208
2	John H. Kerr, Dem.	9,426
3	Graham A. Barden, Dem.	14,798
	H. B. Kornegay, Rep.	7,385
4	Harold D. Cooley, Dem.	22,977
	Ben L. Spence, Rep.	12,005
5	John H. Folger, Dem.	26,316
	S. Evan Hall, Rep.	15,521
6	Carl T. Durham, Dem.	18,564
	A. A. McDonald, Rep.	10,721
7	J. Bayard Clark, Dem.	15,428
	H. Edmund Rodgers, Rep.	5,445
8	C. B. Deane, Dem.	29,920
	Joseph H. Whicker, Sr., Rep.	25,305
9	Robert L. Doughton, Dem.	36,007
	Clyde R. Greene, Rep.	29,585
10	Hamilton C. Jones, Dem.	24,614
	P. C. Burkholder, Rep.	21,096
11	A. L. Bulwinkle, Dem.	25,544
	C. Y. Nanney, Jr., Rep.	18,143
12	Monroe M. Redden, Dem.	43,690
	Guy Weaver, Rep.	28,531

NORTH DAKOTA

Governor

Fred G. Aandahl, Rep.	116,672
Quentin Burdick, Dem.	52,719

U. S. Senator

William Langer, Rep.	88,210
Abner B. Larson, Dem.	38,368
Arthur E. Thompson, Ind.	38,804

Representatives (two at large)

William Lemke, Rep.	103,205
Charles R. Robertson, Rep.	102,087
Edwin Cooper, Dem.	29.865
James M. Hanley, Dem.	41,189

OHIO

Governor

Thomas J. Herbert, Rep.	1,166,550
Frank J. Lausche, Dem.	1,125,997
Arla A. Albaugh, Soc.-Lab.	11,103

U. S. Senator—full term

John W. Bricker, Rep.	1,275,774
James W. Huffman, Dem.	947,610
Wm. Farkas, Soc.-Lab.	13,885

Representatives

At large—

	George H. Bender, Rep.	1,281,864
	Wm. M. Boyd, Dem.	871,660
1	Charles H. Elston, Rep.	72,909
	G. Andrews Espy, Dem.	40,594
2	William E. Hess, Rep.	67,067
	Francis G. Davis, Dem.	39,112
3	Raymond H. Burke, Rep.	71,171
	Edward J. Gardner, Dem.	65,749
4	Robert F. Jones, Rep.	46,718
	Merl J. Bragg, Dem.	32,160
5	Cliff Clevenger, Rep.	30,623
	Willard Thomas, Dem.	20,163
6	Edward O. McCowen, Rep.	39,992
	Franklin E. Smith, Dem.	33,013
7	Clarence J. Brown, Rep.	63,390
	Carl H. Ehl, Dem.	29,824
8	Frederick C. Smith, Rep.	40,755
	John T. Siemon, Dem.	22,945
9	Homer A. Ramey, Rep.	59,394
	Michael V. DiSalle, Dem.	59,057
10	Thomas A. Jenkins, Rep.	35,406
	H. A. McCown, Dem.	17,719
11	Walter E. Brehm, Rep.	31,586
	Lester S. Reid, Dem.	20,593
12	John M. Vorys, Rep.	74,691
	Arthur P. Lamneck, Dem.	45,779
13	Alvin E. Weichel, Rep.	49,725
	Frank W. Thomas, Dem.	19,237
14	Walter B. Huber, Dem.	88,178
	Fred W. Danner, Rep.	77,674
	Harry Hurtt, Jr.	1,676
15	P. W. Griffiths, Rep.	36,564
	Robert T. Secrest, Dem.	32,159
16	Henderson H. Carson, Rep.	65,639
	William R. Thom, Dem.	51,934
17	J. Harry McGregor, Rep.	57,167
	Wesley W. Purdy, Dem.	30,406
18	Earl R. Lewis, Rep.	55,140
	Eugene A. Blum, Dem.	38,606
19	Michael J. Kirwan, Dem.	88,872
	Norman W. Adams, Rep.	59.607
20	Michael A. Feighan, Dem.	49,670
	Walter E. Obert, Rep.	24,476
21	Robert Crosser, Dem.	49,111
	James S. Hudec, Rep.	27,657
22	Frances P. Bolton, Rep.	175,823
	Earl Heffley, Dem.	69,050
	Matthew DeMore	9,029

OKLAHOMA

Governor

Roy J. Turner, Dem.	259,491
Flynn, Rep.	227,426

Representatives

1	George B. Schwabe, Rep.	61,205
	Oras A. Shaw, Dem.	51,041
2	William G. Stigler, Dem.	32,559
	Fred P. Snider, Rep.	19,029
3	Carl Albert, Dem.	38,699
	Eleanor L. Watson, Rep.	6,835
4	Glen D. Johnson, Dem.	36,559
	Pliney S. Frye, Rep.	20,230
5	A. S. Mike Monroney, Dem.	47,173
	Carmon C. Harris, Rep.	43,508
6	Toby Morris, Dem.	30,408
	Joe Hart, Jr., Rep.	15,912
7	Preston E. Peden, Dem.	26,585
	J. Warren White, Rep.	7,204
8	Ross Rizley, Rep.	30,240
	Tom Hieronymus, Dem.	24,954

OREGON

Governor

Earl Snell, Rep.	237,681
Carl C. Donaugh, Dem.	106,474

Representatives

1	Walter Norblad, Rep.	67,535
	Lyman Ross, Dem.	26,278
2	Lowell Stockman, Rep.	32,541
	Lamar Townsend, Dem.	15,744
3	Homer D. Angel, Rep.	74,061
	Lew Wallace, Dem.	56,525

4	Harris Ellsworth, Rep.	42,868
	L. A. Wood, Dem.	19,118

PENNSYLVANIA

Governor

James H. Duff, Rep.	1,828,462
John S. Rice, Dem.	1,270,947
J. W. Killip, Pro.	13,838
George S. Taylor, Soc.-Lab.	10,747

U. S. Senator

Edward Martin, Rep.	1,853,458
Joseph F. Guffey, Dem.	1,245,338
Dale H. Learn, Pro.	17,451
Frank Knotek, Soc.-Lab.	11,613

Representatives

1	James Gallagher, Rep.	70,680
	William A. Barrett, Dem.	52,593
2	Robert N. McGarvey, Rep.	70,474
	William T. Granahan, Dem.	66,674
3	Hardie Scott, Rep.	83,618
	Albert S. Townsend, Dem.	50,962
4	Franklin J. Maloney, Rep.	55,239
	John Edward Sheridan, Dem.	49,025
	John K. Rice, U. Cit.	5,688
5	George W. Sarbacher, Jr., Rep.	73,946
	William J. Green, Jr., Dem.	56,086
6	Hugh D. Scott, Jr., Rep.	82,671
	Herbert J. McGlinchey, Dem.	58,557
7	E. Wallace Chadwick, Rep.	76,021
	Vernon A. O'Rourke, Dem.	38,253
8	Charles L. Gerlach, Rep.	49,196
	Henry Chapin, Dem.	34,260
9	Paul B. Dague, Rep.	64,311
	Edgar Campbell, Dem.	24,175
10	James P. Scoblick, Rep.	47,704
	Frank X. Murray, Dem.	45,843
11	Mitchell Jenkins, Rep.	58,413
	Daniel J. Flood, Dem.	56,570
12	Ivor D. Fenton, Rep.	62,151
	Ralph M. Bashore, Dem.	36,954
13	Frederick A. Muhlenberg, Rep.	33,409
	Daniel K. Hoch, Dem.	25,073
	Raymond S. Hofses	2,717
14	Wilson D. Gillette, Rep.	43,142
	James S. Fields, Dem.	20,842
15	Robert F. Rich, Rep.	44,264
	Richard F. Hartzell	20,376
16	Samuel K. McConnell, Jr., Rep.	76,314
	William L. Batt, Jr., Dem.	26,305
17	Richard M. Simpson, Rep	37,194
	Lowell H. Alexander, Dem.	18,972
18	John C. Kunkel, Rep.	77,349
	William B. Freeland, Dem.	34,708
19	Leon H. Gavin, Rep.	41,500
	Lloyd N. Hugh, Dem.	18,199
	R. S. Byers, Pro.	1,307
20	Francis E. Walter, Dem.	39,751
	Norman A. Peil, Rep.	36,008
21	Chester H. Gross, Rep.	45,559
	John W. Brehm, Dem.	42,118
22	James E. Van Zandt, Rep.	42,217
	John A. Shartle, Dem.	21,853
23	William J. Crow, Rep.	34,194
	John W. Rankin, Dem.	30,493
24	Thomas E. Morgan, Dem.	39,749
	Roy A. Purviance, Rep.	30,231
25	Louis Graham, Rep.	53,932
	Samuel G. Neff, Dem.	37,723
26	Harve Tibbott, Rep.	49,573
	Thomas A. Owens, Dem.	41,224
27	Augustine B. Kelley, Dem.	46,137
	Roy C. McKenna, Rep.	41,030
28	Carroll D. Kearns, Rep.	56,835
	Charles W. Webb, Dem.	32,166
29	John McDowell, Rep.	55,329
	Harry J. Davenport, Dem.	48,091
30	Robert J. Corbett, Rep.	57,827
	James W. Knox, Dem.	38,362
31	James G. Fulton, Rep.	70,419
	Edward A. Schultz, Dem.	40,010
32	Herman P. Eberharter, Dem.	62,963
	Ignatius J. Pillart, Rep.	37,247
33	Frank Buchanan, Dem.	51,656
	John Robert Brown, Jr., Rep.	37,555

RHODE ISLAND

Governor

John A. Pastore, Dem.	147,770
Murphy, Rep.	125,545

U. S. Senator

J. Howard McGrath, Dem.	150,748
W. Gurnee Dyer, Rep.	122,780

Representatives

1	Aime J. Forand, Dem.	74,324
	Raymond A. Mailloux, Rep.	55,900
	Charles R. Napier, Constitutional Gov.	890
2	John E. Fogarty, Dem.	74,393
	John J. Kelly, Jr., Rep.	66,887

SOUTH CAROLINA

Governor

J. Strom Thurmond, Dem.	26,520

Representatives

1	L. Mendal Rivers, Dem.	5,354
2	John J. Riley, Dem.	4,795
3	W. J. B. Dorn, Dem.	3,527
4	Joseph R. Bryson, Dem.	3,363
5	J. P. Richards, Dem.	3,357
6	John L. McMillan	5,670

SOUTH DAKOTA

Governor

George T. Michelson, Rep.	108,998
Richard Haeder, Dem.	53,294

Representatives

1	Karl Mundt, Rep.	76,721
	Merton B. Tice, Dem.	48,065

TENNESSEE

Governor

Jim Nance McCord. Dem.	149,937
W. O. Lowe, Rep.	73,222
John R. Neal, Dem.	6,296

U. S. Senator

Kenneth D. McKellar, Dem.	145,654
W. B. Ladd, Rep.	57,238
J. R. Neal, Dem.	11,516
H. H. Ross, Dem.	4,303

Representatives

1	Dayton E. Phillips, Rep.	24,144
2	John Jennings, Jr., Rep.	28,752
	James Douglas Wyrick, Dem.	5,485
3	Estes Kefauver, Dem.	26,779
	George Bagwell, Rep.	2,725
4	Albert Gore, Dem.	7,624
	Dr. H. E. McLean, Rep.	3,673
5	Joe L. Evins, Dem.	11,646
6	J. Percy Priest, Dem.	7,178
	Will T. Perry, Rep.	2,135
7	Wirt Courtney, Dem.	11,658
	J. Walter Tanner, Rep.	1
8	Tom Murray, Dem.	11,891
	Tommy Vaughn	1
	Kye Rorie	1
9	Jere Cooper, Dem.	12,685
10	Clifford Davis, Dem.	37,069
	A. B. Clapp, Rep.	1

TEXAS

Governor		
	Beauford H. Jeater, Dem.	272,152
	Nolte, Rep.	26,869
U. S. Senator		
	Tom Connally, Dem.	336,931
	Murray C. Sells, Rep.	43,750
Representatives		
1	Wright Patman, Dem.	11,929
2	J. M. Combs, Dem.	19,909
	Don Parker, Rep.	793
3	Lindley Beckworth, Dem.	10,686
4	Sam Rayburn, Dem.	11,957
	Floyd Harry, Rep.	800
5	J. Frank Wilson, Dem.	12,267
	Lewis W. Stayart, Rep.	3,921
6	Olin E. Teague, Dem.	9,221
7	Tom Pickett, Dem.	14,810
8	Albert Thomas, Dem.	42,163
	Richard F. Burns, Rep.	4,253
9	Joseph J. Mansfield, Dem.	16,712
10	Lyndon B. Johnson, Dem.	16,947
11	W. R. Poage, Dem.	9,178
12	Wingate D. Lucas, Dem.	15,266
	Elton M. Hyder, Rep.	2,146
13	Ed Gossett, Dem.	17,714
14	John E. Lyle, Dem.	30,064
15	Milton H. West, Dem.	14,623
16	R. Ewing Thomason, Dem.	8,114
17	Omar Burleson, Dem.	14,874
18	Eugene Worley, Dem.	11,869
	Frank T. O'Brien, Rep.	4,180
19	George H. Mahon, Dem.	15,821
	Mohler D. Temple, Rep.	905
20	Paul J. Kilday, Dem.	10,543
21	O. C. Fisher, Dem.	15,701

UTAH

U. S. Senator		
	Arthur V. Watkins. Rep.	101,142
	Abe Murdock, Dem.	96,257
Representatives		
1	Walter K. Granger, Dem.	44,888
	David J. Wilson, Rep.	44,784
2	William A. Dawson, Rep.	56,402
	J. Will Robinson, Dem.	50,598

VERMONT

Governor		
	Ernest W. Gibson, Rep.	57,812
	Coburn, Dem.	14,282
U. S. Senator		
	Ralph E. Flanders, Rep.	54,729
	Charles P. McDevitt, Dem.	18,594
Representatives		
	Charles A. Plumley, Rep.	46,985
	M. J. Caldbeck, Dem.	26,056

VIRGINIA

U. S. Senator—short term		
	A. Willis Robertson, Dem.	169,680
	Robert Woods, Rep.	72,253
	Lawrence S. Wilkes, Soc.	7,024
U. S. Senator—long term		
	Harry Flood Byrd, Dem.	163,960
	Lester S. Parsons, Rep.	77,005
	Howard H. Carwile, Indep.	5,189
	Alice Burke, Com.	3,318
	Thomas E. Boorde, Pro.	1,764
	Clarke T. Robb, Soc.	1,592
Representatives		
1	Schuyler Otis Bland, Dem.	13,863
	Walter Johnson, Rep.	4,628
2	Porter Hardy, Jr., Dem.	19,267
	Sidney H. Kelsey, Rep.	10,078
3	J. Vaughan Gary, Dem.	21,947
	Earle Lutz, Rep.	7,974
4	Patrick H. Drewry, Dem.	13,636
	Andrew S. Condrey, Pro.	2,012
5	Thomas B. Stanley, Dem.	17,741
	William L. Creasy, Rep.	6,390
6	J. Lindsay Almond, Jr., Dem.	20,068
	Frank R. Angell, Rep.	10,641
	Ruby Mae Wilkes, Soc.	272
7	Burr P. Harrison, Dem.	19,535
	Karl Jenkins, Rep.	11,813
8	Howard W. Smith, Dem.	21,252
	Lawrence Michael, Rep.	12,950
9	John W. Flannagan, Jr., Dem.	20,610
	S. H. Sutherland, Rep.	17,152
	John Albert Goodpasture, Jr., Indep.	2,026

WASHINGTON

U. S. Senator		
	Harry P. Cain, Rep.	358,847
	Hugh B. Mitchell, Dem.	298,683
	Harry Morton, Soc.-Lab.	2,297
	Charles R. Swett, Soc. Workers	515
Representatives		
1	Homer R. Jones, Rep.	113,289
	Hugh De Lacy, Dem.	64,155
2	Henry M. Jackson, Dem.	54,089
	Payson Peterson, Rep.	47,838
3	Fred Norman, Rep.	47,875
	Charles R. Savage, Dem.	40,980
4	Hal Holmes, Rep.	51,476
	Earl S. Coe, Dem.	24,662
5	Walt Horan, Rep.	58,535
	John T. Little, Dem.	34,870
	Knute Hill, Indep. Progressive	2,028
6	Thor C. Tollefson, Rep.	56,702
	John M. Coffee, Dem.	48,431

WEST VIRGINIA

U. S. Senator		
	Harley M. Kilgore, Dem.	273,151
	Tom Sweeney, Rep.	269,617
Representatives		
1	Francis J. Love, Rep.	45,691
	Mathew M. Neeley, Dem.	40,370
2	Melvin C. Snyder, Rep.	41,224
	Jennings Randolph, Dem.	39,041
3	E. G. Rohrbough, Rep.	42,386
	Cleveland M. Bailey, Dem.	39,872
4	Herbert S. Ellis, Rep.	54,932
	M. G. Burnside, Dem.	49,408
5	John Kee, Dem.	43,154
	Hartley Sanders, Rep.	32,754
6	E. H. Hedrick, Dem.	57,461
	Harold H. Neff, Rep.	51,065

WISCONSIN

Governor		
	Walter S. Goodland, Rep.	621,970
	Daniel W. Hoan, Dem.	406,499
	Walter H. Uphoff, Soc.	8,996
	Sigmund G. Eisenscher, Com.	1,857
	Jerry R. Kenyon, Soc.-Lab.	959
U. S. Senator		
	Joseph R. McCarthy, Rep.	620,430
	Howard J. McMurray, Dem.	280,145
	Edwin K. Knappe, Soc.	11,750
	Georgia Cozzini, Soc.-Lab.	1,552
Representatives		
1	Lawrence H. Smith, Rep.	58,344
	John R. Redstrum, Dem.	44,188
	Lars P. Christensen, Soc.	734
2	Robert K. Henry, Rep. (died Nov. 20, 1946)	68,794

	William G. Rice, Dem.	39,657
	Ayer T. Wallace, Soc.	931
3	William H. Stevenson, Rep.	65,177
	Walter L. Alexander, Soc.	2,633
4	John C. Brophy, Rep.	49,144
	Edmund V. Bobrowicz, Dem.	44,398
	George E. Helberg, Soc.	2,470
	Thaddeus F. Wasielewski, Ind.	38,502
5	Charles J. Kersten, Rep.	76,364
	Andrew J. Biemiller, Dem.	59,764
	Frank P. Zeidler, Soc.	5,027
6	Frank B. Keefe, Rep.	58,444
	Edwin W. Webster, Dem.	31,550
	Rudolph Renn, Soc.	991
7	Reid F. Murray, Rep.	60,390
	Elmer E. Farley, Dem.	23,481
	John A. Pearson, Jr., Soc.	505
8	John W. Byrnes, Rep.	67,840
	Martin J. Young, Dem.	37,013
9	Merlin Hull, Rep.	70,527
	Adolph Maassen, Soc.	695
10	Alvin E. O'Konski, Rep.	40,263
	Henry J. Berquist, Dem.	32,238
	Adolph F. Kreie, Soc.	529
	Eugene R. Princeton, Ind.	2,973

WYOMING

Governor	
Lester C. Hunt, Dem.	43,020
Wright, Rep.	38,333
U. S. Senator	
Joseph C. O'Mahoney, Dem.	45,843
Henderson, Rep.	35,714
Representatives	
Frank A. Barrett, Dem.	44,482
McIntyre, Rep.	34,950

PERIODICAL PUBLICATIONS

American Mercury
570 Lexington Ave., New York City.

American Political Science Review
Harris Hall, Northwestern University, Evanston, Ill.

American Spectator
683 Broadway, New York City.

Commonweal, The
386 Fourth Ave., New York City.

Congressional Digest
2131 LeRoy Place N.W., Washington, D. C.

Current History
135 S. Second St., Philadelphia.

Journal of Political Economy
5750 Ellis Ave., Chicago.

Nation, The
20 Vesey St., New York City.

New Republic, The
40 East 49th Street, New York City.

Newsweek
152 West 42nd Street, New York City.

Political Science Quarterly
Columbia University, New York City.

Time Weekly Newsmagazine (The)
9 Rockefeller Plaza, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

American Antiquarian Society, Salisbury St. and Park Ave., Worcester, Mass.

American Baptist Historical Society, Upland Avenue, Chester, Pa.

American Catholic Historical Association, Catholic University, Brookland Station, Washington, D. C.

American Historical Assn., Library of Congress Annex, Study Room 274, Washington, D. C.

American Irish Historical Society, 991 Fifth Ave., New York City.

American Jewish Historical Society, Broadway and 122nd Street, New York City.

American Numismatic Society, 156th Street and Broadway, New York City.

American Scenic and Historic Preservation Society, 287 Convent Avenue, New York City.

American Society of Church History, 5757 University Ave., Chicago.

Canadian Historical Assn., Ottawa, Canada.

Freethinkers of America Inc., 370 West 35th Street, New York City.

Hispanic Society of America, Broadway between 155th and 156th St., New York City.

Holland Society of New York, 90 West Street, New York City.

Huguenot Society of America, 122 East 58th Street, New York City.

Methodist Historical Library, 150 Fifth Ave., New York City.

Mississippi Valley Historical Assn., Cedar Rapids, Iowa.

New England Historic Genealogical Society, 9 Ashburton Place, Boston, Mass.

Presbyterian Historical Society, 520 Witherspoon Building, Philadelphia.

Proportional Representation League, 1417 Locust St., Philadelphia, Pa.

Society for the Preservation of New England Antiquities, 141 Cambridge St., Boston, Mass.

Steuben Society of America, 369 Lexington Ave., New York City.

Thomas Paine National Historical Assn., North Ave., New Rochelle, N. Y.

United States Catholic Historical Society, 346 Convent Ave., New York City.

Woodrow Wilson Foundation, The, 45 E. 65th Street, New York City.

POLITICAL

Academy of Political Science, Fayerweather Hall, Columbia University, New York City.

American Academy of Political and Social Science, 3457 Walnut St., Philadelphia, Pa.

American Political Science Assn., 105 Harris Hall, Northwestern University, Evanston, Ill.

League for Industrial Democracy, 112 E. 19th Street, New York City.

Women's National Democratic Club Inc., 50 West 45th St., New York City.

Women's National Republican Club, 3 West 51st Street. New York City.

DIVISION II

INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

THE UNITED NATIONS

By Winifred N. Hadsel
Research Associate, Foreign Policy Association

SECURITY COUNCIL

The year 1946 was one of intense activity on the part of the United Nations Security Council, the General Assembly, and their dependent committees and commissions, as they sought to perfect machinery that would preserve international harmony.

The Security Council during 1946, consisted, in addition to its five permanent members (United States, U.S.S.R., United Kingdom, China, and France), of Australia, Brazil, and Poland, elected by the General Assembly for two year terms, and the Netherlands, Egypt and Mexico, elected to serve one year. The Council convened in London on Jan. 17, and through the remainder of the year it was almost continuously involved with controversial issues relating to the maintenance of peace and security, as defined in Chapter VI of the United Nations Charter. No sooner was the Council established than it was called on to consider the charge that the Soviet Union was interfering in the internal affairs of Iran.

IRAN—SOVIET UNION

The dispute between the Soviet Union and Iran represented a new phase of an old struggle which had been going on between the two countries as a result of Russia's efforts to establish its influence in the northern Iranian provinces and to obtain oil concessions in this area. The Iranian government opposed Russian development of this region lest the U.S.S.R. should feel that exploitation of its oil resources would necessitate the fairly complete imposition of the Soviet economic system on northern Iran. The United States and Britain were also concerned by Russia's apparent efforts to gain Iranian concessions in return for the withdrawal of the Red Army troops, partly because of their own interest in the country's oil and partly because of their fear that the U.S.S.R. might attempt to gain political as well as economic control of this strategically important area of the Middle East.

During the Second World War the three great powers had harmonized their interests in Iran by means of an arrangement whereby American and British troops were stationed in the southern and central areas of the country while Red Army troops were based on the northern provinces. Following the end of the war, the United States evacuated all its military personnel, which had been connected with the Persian Gulf Command (Jan. 1, 1946), and the British ended their occupation by March 1, the date set for the withdrawal of Russian and British troops by the Anglo-Soviet-Iranian Treaty of Alliance of 1942. Red Army troops, however, remained in northern Iran after this date and showed signs of attempting to strengthen the local Communist-led Tudeh party in order to assure the establishment of a pro-Soviet regime after the withdrawal of the Russian forces.

The Iranian case was first brought before the Security Council Jan. 19, when the head of the Iranian delegation to the United Nations, Hassan Taquizadeh, stated that, owing to the interference of Soviet officials and armed forces in Iranian affairs, a situation had arisen which might lead to international friction. The Iranian representative accordingly requested the Executive Secretary, in accord with the terms of Article 35-1 of the Charter, to bring the matter to the attention of the Security Council in order that the Council might investigate the situation and recommend appropriate terms of settlement. The application was thereupon considered by the Council, with the Iranian representative participating in the discussion, and it was unanimously agreed (Jan. 30, 1946), that Russia and Iran, having indicated their willingness to seek a solution by negotiation, should resume discussion and inform the Council of any results which they might achieve. In the meantime the Council retained the right to request information at any time on the progress of the negotiations.

When negotiations failed to produce an agreement, the Iranian issue was again brought to the attention of the Security Council meeting at its temporary headquarters at Hunter College in the Bronx, New York City. The Iranian Ambassador to the United States, Hussein Ali, stated that the Soviet Union was maintaining Red Army troops in Iran after March 2, 1946, contrary to the express provisions of the Anglo-Soviet-Iranian Treaty, and that the U.S.S.R. was continuing to interfere in the internal affairs of Iran through the medium of Soviet agents, officials, and armed forces.

The question as to how the issues raised by the Iranian application should be settled was the subject of lengthy discussions by the Council. Andrei A. Gromyko, the Russian delegate on the Council, declared that the matter should be handled through the continuation of direct negotiations between Moscow and Teheran. The British and American delegates, on the other hand, insisted that the Security Council should hear Iran's case against the Soviet Union. When a majority of the Council supported the British and American view on March 27, M. Gromyko left the Council Chamber and remained absent 13 days, while the Council continued to discuss the Iranian case. The Russian action during the Council's consideration of its major international issue raised the question of the effectiveness of the Council if one of the great powers could frustrate the Council by refusing to attend its meetings.

This question was not directly answered by the Council, neither was it clearly determined how far the Council might be able to proceed in taking action against one of the great powers. On April 4, the Council resolved, during the absence of the Soviet delegate, to defer further proceedings on the Iranian appeal until May 6, at which time the Soviet and Iranian governments were requested to report to the Council on the withdrawal of Soviet troops from Iran. Two days later (April 6), the Soviet representative attempted to secure the removal of the Iranian question from the agenda of the Council, on the grounds that full evacuation of Soviet troops from Iran had begun on March 24 and would be completed in five or six weeks. The Soviet delegate also declared that an understanding on all points had been reached between the Soviet and Iranian governments on April 4. Included in this understanding was an agreement that Russia should secure oil concessions in northern Iran, subject to the ratification of the Iranian parliament. (Ratification had not taken place by the end of 1946.)

According to the Iranian Ambassador, however, the government of Iran desired that the question should remain on the agenda of the Council. When, a few days later, the Ambassador reported that his government had sent a telegram stating that it had complete confidence in the word of the Soviet Union and hence withdrew its complaint, a majority of the Council, including delegates of the United States and Britain, decided that this communication could not be accepted as the basis for a decision by the Council since the Iranian statement might be the result of Soviet pressure.

Despite repeated Russian demands that the Council drop the Iranian issue, the Council proceeded May 6 to call for the reports the Council had requested from both Moscow and Teheran on the withdrawal of Soviet troops from Iran. Moscow failed to send such a report, but the Iranian Ambassador presented a statement to the effect that investigations made by responsible Iranian officials showed that Soviet troops had been completely evacuated from several provinces. Because, however, of Russian interference, his government declared that it had been impossible to verify, by direct observation, reports that the evacuation of Red Army troops from Azerbaijan had been going forward. In view of this report that the Iranian government was unable to state, as of May 6, whether the withdrawal of all Soviet troops from Iran had been completed, the Security Council resolved to request the Iranian government for another report on May 20.

In this second report the Iranian Ambassador declared that his government was still unable to exercise any effective authority in the Province of Azerbaijan and that Soviet interference in the internal affairs of Iran had not ceased. Although telegraphic reports from the Iranian Prime Minister, Ahmad Ghavam, stated that Soviet troops had evacuated Azerbaijan on May 6, 1946, the Council decided, on May 22, to adjourn the Iranian question until a date in the near future, instead of removing it from the Council's agenda. In this way, the Council attempted to maintain pressure on Russia and to bring world opinion to bear on the Iranian case until the Soviet Union ceased its intervention.

Nevertheless, it was not until the closing months of 1946 that the Iranian government managed to restore its power in Azerbaijan. During November, the government massed troops on the frontier and announced to the pro-Soviet Azerbaijan Democratic party, which had grown out of the Tudeh party and controlled the province, of its determination to take the area by force if necessary. In reply the *de facto* Azerbaijan regime warned the Iranian army not to attack, and the Soviet Ambassador called upon the Iranian Premier to warn him that disorders might occur on the Soviet border if Iranian troops entered Azerbaijan.

When, however, the central government troops marched into Tabriz, the capital of Azerbaijan, Dec. 13, they met with little resistance, and Dec. 18 Premier Ghavam declared that he had dissolved the Azerbaijan Democratic party and liquidated the Soviet-sponsored provincial government. Russia, instead of attempting to support the Azerbaijan Democratic party, which had shown itself weak and highly unpopular, assailed its leaders for their failure to compromise with the central government. In broadcasts from Baku, Soviet spokesmen declared that the Azerbaijan leaders should have come to an agreement with the central government in order to make it possible for the pro-Soviet Democratic party to remain in existence. The important fact, however, seemed to be that Russia, realizing the inherent weakness of the pro-Soviet groups on which it had depended in Azerbaijan and conscious of the strong international opposition of its Iranian policy, had decided to withdraw from Iran. The Iranian government, despite its apparent victory in this particular phase of its long struggle with Russia, declared Dec. 18 that it had made no request to the Security Council to drop its complaint of Russian interference. Removal of the complaint from the agenda of the Council thus awaited the action of the great powers.

GREECE

A second issue before the Security Council, which directly concerned two of the major powers, was that of Greece. On Jan. 21, 1946, the Soviet delegate requested the Security Council to discuss the situation in Greece on the grounds that the presence of British troops in that country, following the termination of the war, constituted an interference in the internal affairs of Greece and caused tension fraught with grave consequences both for the Greek people and for the maintenance of peace and security.

This Russian charge highlighted the historic diplomatic dispute between Moscow and London over the eastern Mediterranean. Russia, for its part, apparently believed that, if British troops did not leave Greece before the elections, scheduled for March 31, a royalist government might be elected which would maintain Greece's alliance with Britain and deny Russia the strategic bases it felt it needed to protect its communications through the Dardanelles. Britain, on the other hand, feared that, if it withdrew its troops from Greece, civil war would again break out in that country. As a result of this strife, the British feared that Communist elements might establish a minority regime which would grant the Soviet Union strategic bases astride Britain's vulnerable Mediterranean Sea route to India.

After a heated discussion of the Greek question, in the course of which the British delegate, Foreign Secretary Ernest Bevin, demanded that the Security Council issue a formal declaration acquitting Britain of the Soviet charges, the Soviet Union and Britain reached a compromise. On Feb. 7, 1946 the Russian representative, Vice Commissar of Foreign Affairs Andrei Y. Vishinsky, agreed not to press his charge that British troops in Greece had created a situation threatening world peace and to withdraw his demand for action by the Council. Bevin in turn offered to retract his demand for a formal acquittal, and the Security Council thereupon agreed to consider the Greek question closed.

A few months later, Aug. 24, the issue of British troops in Greece was again presented to the Security Council when the Ukrainian SSR addressed a letter to the Council declaring that "as a result of the irresponsible policy of the Greek government (the royalist and pro-British regime which had been elected on March 31), a situation has arisen in the Balkans which represents a grave danger to peace and security." The Ukrainian letter referred particularly to the numerous border incidents along the Greek-Albanian frontier, which, the Ukrainian Foreign Minister charged, were "provoked by Greek armed units," and to persecution by the Greek government of national minorities in Macedonia, Thrace, and Epirus. The principal factor responsible for the situation in Greece and along its frontiers, he declared, was the presence of British troops in Greece and "the direct intervention of British military representatives into the internal affairs of this Allied country in behalf of aggressive Monarchist elements."

In a rapid and unexpected move, the United Kingdom and The Netherlands demanded, Aug. 28, that the Security Council refuse to consider the Ukrainian charges that Greece, with British aid, was creating a Balkan crisis until the accusations had been bolstered by concrete evidence. The imputed recent disorders in Greece, Sir Alexander Cadogan, the British delegate, and Vassil Dendramis, the Greek representative, declared, were owing to Communist pressure rather than to the presence of British forces. After a month of debate concerning these charges and counter-charges, the Council decided to dismiss the allegations made by the Ukrainian SSR.

The dismissal of these charges did not, however, end the Greek case. As open civil war broke out in Greece during the autumn and an increasing number of border difficulties occurred between Greece, on the one hand, and its pro-Soviet neighbors, Bulgaria, Yugoslavia, and Albania, on the other, the Greek government decided to approach the Council for assistance. On Nov. 26, Greece charged that 37 incidents had taken place along the Greek frontiers between Sept. 9 and Nov.

10. Responsibility for these incidents, the Greek letter implied, rested with Greece's northern neighbors. Premier Constantin Tsaldaris flew from Athens to Lake Success in order to bolster the Greek charge that "foreign sources" were inspiring and directing disorders and violence in northern Greece, for the purpose of partitioning Greece, and to ask the Council to take some measures to end the "tragic situation."

Several months before this request was made the acting American representative on the Council, Herschel V. Johnson, had proposed (Sept. 18) that a United Nations sub-committee be appointed to inquire into incidents occurring on Greece's entire northern frontier. At the time this proposal was made, no action was taken to implement it. Following the Greek request for action, however, the proposal for an investigation was revived, and at the end of December an 11-nation committee, composed of representatives of states belonging to the 1947 Security Council, was named to investigate the Greek situation and to report to the Council. (See "The United States and Europe.")

INDONESIA

In the case of Indonesia the Council was also requested to send a commission to carry out an inquiry on the spot, but the resolution to this effect was lost. On Jan. 21, 1946, the Ukrainian SSR representative drew the attention of the Council to the situation which had arisen in Indonesia as a result of clashes between the Indonesian nationalists and Dutch and British troops and alleged that it threatened international peace and security.

As the first step toward establishing peace in Indonesia, the Ukrainian representative declared, the Council should carry out an investigation. After a long discussion, however, the Ukrainian resolution failed to obtain the required number of votes, and the matter was closed.

SYRIA AND LEBANON

The Security Council helped to promote a settlement of a dispute between Syria and Lebanon, on the one hand, and France and Britain, on the other. These two small countries, which wished to secure an agreement for the removal of French and British troops from their territories and found themselves unable to secure such an arrangement, brought their case before the Security Council on Feb. 4. The Syrian and Lebanese delegations declared that their governments had expected that British and French troops, which had been stationed in their countries during the war, would be withdrawn immediately following cessation of hostilities with Germany and Japan. They pointed out, however, that a Franco-British agreement of Dec. 13, 1945, made the withdrawal of troops subject to conditions which Syria and Lebanon considered inconsistent with the spirit and letter of the United Nations Charter.

During the debate which ensued in the Council, an American resolution, expressing confidence that the British and French troops would be withdrawn as soon as practicable and that the parties involved would undertake negotiations to that end, was accepted by a majority of the Council. Russia, however, vetoed this proposal on the grounds that it was inadequate, with the result that the resolution was lost. Nevertheless, the representatives of France and Britain stated that their governments would give effect to the majority decision of the Council.

France reported to the Council, April 30, that, as far as Syria was concerned, the British and French governments had jointly made the arrangements necessary for the full evacuation of Syrian territory by April 30. In the case of Lebanon, France declared that the withdrawal of French troops as a whole could be completed by Aug. 31, and that the small remaining group would be recalled not later than Dec. 31. On May 1, the United Kingdom reported that all British troops would be withdrawn from Syria by April 30 and from Lebanon by June 30.

SPAIN

Spain became the subject of an international debate on April 17, when, at Poland's request, the Security Council began an extended discussion of whether the Franco regime constituted a threat to world peace. Urging the Council to direct all member states to break diplomatic relations with Spain, the Polish delegate, Dr. Oscar Lange, based his case on the following points: that the Franco regime was forced on the Spanish people by the Axis during the Second World War; that it had since created a state of international friction by mobilizing troops on the French frontier; and that it tolerated and "encouraged" numerous German military and scientific personnel in Spanish territory.

The crux of the argument raised by the Spanish case was whether, under the Charter, United Nations intervention on the grounds cited by Poland would be in order. Britain and The Netherlands took the position that the nature of the Franco regime was a matter of domestic concern, and, moreover, that the evidence adduced to prove Spain a source of international friction was too slender to justify collective United Nations action. Russia, on the other hand, took the view that the Charter positively authorized intervention by the United Nations when the internal situation of any country constituted a danger to international peace and security. Since the Franco government was a "breeding ground of Fascism," the Russian delegate declared, Spain's internal situation constituted such a danger.

As the debate on the Spanish case progressed it became clear that, however much the Western powers as well as Russia might wish to see Franco eliminated from the Spanish scene, the great powers were unable to agree on the kind of regime which should be established in Spain. The American delegate, Edward R. Stettinius, pointed out this obstacle to united action against Spain when he declared that, undesirable though the existing Spanish government was, a resumption of civil war in Spain would constitute a far greater threat to peace since it would almost surely have grave international repercussions.

At the suggestion of the Australian delegate, a sub-committee of five was appointed to determine whether the situation in Spain endangered international peace and security, and, if so, to propose practical measures that the United Nations could take. This sub-committee, composed of representatives of Australia, Brazil, China, France, and Poland, submitted a report on June 6 which declared that the activities of the Franco regime did not constitute an existing threat to peace and that the Security Council therefore had no authority to undertake any punitive measures against Spain. However, the sub-committee continued, since Spain constituted a "potential menace to international peace and security," the Security Council was empowered, under Article 36-1, to recommend appropriate steps to improve the situation. No suggested measures succeeded, however, in passing the Council because of the veto of the Russian delegate, who contended that the various proposals were inadequate to cope with the situation. Unable to break this impasse, the Council was able to agree only at the end of June that it remained seized of the Spanish question, and that in doing so it did not prejudice the right of the General Assembly to consider the matter.

TROOP COUNT CALLED FOR

A Soviet resolution to the effect that the Council should require all nations with troops on the soil of Allied countries to report on the number of armed forces involved was introduced at the end of August. On Sept. 24, however, the Council abruptly refused to consider this Soviet resolution, under which Britain and the United States would have been required to report the troops and military bases they were maintaining in Greece, China, and other non-enemy countries. This action on the part of the Council marked the first time it refused to consider a camplaint brought by a member government of the United Nations. Dr. Lange, the Polish delegate, protested the Council's action, declaring that it set a dangerous precedent whereby under certain conditions a member of the United Nations might be unable to approach the Council and secure a hearing. Dr. Eelco N. van Kleffens, representing The Netherlands, argued, on the other hand, that it was necessary for the Council not to admit all questions submitted automatically to the agenda, in order to protect members against "unwarranted charges."

ADMISSION OF NEW MEMBERS

Nine states applied for membership in the United Nations during 1946, and, Aug. 29, the Security Council admitted Afghanistan, Iceland, and Sweden, but rejected Albania, Ireland, Outer Mongolia, Portugal, and Trans-Jordan. The Soviet Union used its power of veto against the three British proteges—Ireland, Portugal, and Trans-Jordan—while Britain and the United States voted against Outer Mongolia and Albania, sponsored by Russia for membership.

Siam, which had also applied for membership during the summer, withdrew its request before the Council considered its application. Because of its border dispute with French Indo-China, which arose from the fact that Siam, with the support of Japan, had annexed four of Indo-China's border provinces in 1941, the Siamese government feared that its application for United Nations membership might be vetoed by the French. During the autumn, however, important progress was made toward the settlement of this border problem. Through the good offices of the United States, Siam and France agreed to the appointment of a conciliation commission, as provided by the Geneva Convention of 1927, to hear the recommendations of both France and Siam and to make proposals to the two governments concerning a permanent border. With these prospects for an amicable settlement with the French, Siam again applied for United Nations membership. and was formally admitted Dec. 16. Siam thus became the fifty-fifth member of the United Nations.

MILITARY STAFF COMMITTEE

On the assumption that the Security Council might one day be compelled to threaten or to take military action against a nation endangering world peace, Article 27 of the Charter provides that there should be established a Military Staff Committee to advise and assist the Council in this task. According to the Charter, this Committee should consist of the Chiefs of Staff of the permanent members of the Security Council or their representatives. In accord with this provision, the representatives of the Chiefs of Staff of China, France, USSR, United Kingdom, and United States met in London on Feb. 4, 1946, and established the Military Staff Committee. As its first action, the Committee drew up proposals on its organization and procedure and submitted them Feb. 16 to the Security Council for approval. The Council thereupon instructed its Committee of Experts to examine this report, but the Committee, owing to its preoccupation with procedural rules of the Council and other urgent matters, found itself obliged to postpone consideration of the proposals. Through the year, however, the Military Staff Committee, which resumed sessions in New York March 25 and functioned continuously through the remainder of the year, operated on the basis of provisional rules of procedure, and there was no indication that lack of permanent rules hindered its work in any way. By September, all of the Big Five submitted recommendations for the basic principles to govern formation of the United Nations military force, and although committee discussions were kept secret, it was unofficially reported that the powers reached general agreement that the United Nations could command an effective military force only if the Big Five pledged specific contingents that would be available should the Security Council require them.

ATOMIC ENERGY COMMISSION

Another important body responsible to the Security Council is the Atomic Energy Commission. By adopting the atomic energy resolution agreed on by the Big Three in Moscow, Dec. 24, 1945, the General Assembly set up the Atomic Energy Commission in London, Jan. 24, 1946, and made it responsible to the Security Council. Composed of representatives of the 11 members of the Council and Canada, the Commission was authorized to investigate all matters relating to atomic energy and to make specific proposals for (1) exchanging basic scientific information for peaceful uses, (2) controlling atomic energy to the extent necessary to insure its peaceful use, (3) eliminating atomic weapons as instruments of war, and (4) effectively protecting complying states against violations and evasions by inspection and other means.

There was delay before the 12 nations selected their delegates to the Commission, and the group did not convene until June 14 at Hunter College in the Bronx. At that session, Bernard M. Baruch, the American representative, outlined the position of the United States. The United States, he declared, would agree to destroy its atomic bombs or turn them over to an atomic development authority, together with its technical secrets, but only after "an adequate system for the control of atomic energy, including the renunciation of the bomb as a weapon, has been agreed upon and put into effective operation and punishments set up for the violations of the rules of control." He also made it clear that his plan ruled out the use of the veto by the Big Five in atomic energy decisions.

At the Commission's second meeting, June 19, Andrei A. Gromyko, the Soviet delegate, in opposition to the American proposal, presented a plan which would outlaw the atomic bomb by international agreement. The whole subject was to be kept under the Security Council, the veto would very definitely remain in force, and international inspection was not mentioned.

Plenary meetings of the Commission were rare from that time on, but committees carried on its work. A scientific and technical panel, composed of the world's leading physicists, examined the international aspects of the question and submitted a report to the Commission Sept. 28, warning that, unless appropriate safeguards were taken at each stage in the production of atomic material, it would be difficult to prevent its diversion for purposes of war.

After months of hearings it appeared that the Commission was still far from agreement on its recommendations, and the General Assembly therefore undertook to speed the work of the Commission by resolving that the Security Council should proceed with rapidity on the problem of controlling atomic energy. Thereupon, the Commission undertook consideration of proposals the United States submitted Dec. 5, and on Dec. 20 put these suggestions to a vote and adopted them 10 to 0, with Russia abstaining.

The resolution adopted by the Atomic Energy Commission embodied the following propositions: (1) There should be a strong and comprehensive international system for the control and inspection of atomic energy. (2) Such a system should be established by a treaty or convention, which would become operative only after those members of the United Nations, whose cooperation was essential to the success of the agreement, bound themselves to support it. (3) The treaty should include provisions for: (a) an international authority with power to carry out the provisions of the treaty; (b) no government would have the right to veto the authority's efforts to carry out its obligations or to obstruct inspection; (c) the authority would have charge of research and development of atomic energy for peacetime purposes; (d) the authority would have the right to inspect all installations for the production of atomic energy, to dispose of atomic bombs, and to carry out all other functions in connection with the control of atomic energy.

Despite its adoption of this set of principles for the consideration of the

Security Council, the Commission had actually taken only a small step toward solving the broad problems posed by atomic energy. For, as long as the United States and Russia continued to hold opposite views on the control of atomic energy, no plan, regardless of how technically perfect it might be, seemed to have any chance of succeeding in removing the atomic threat.

THE GENERAL ASSEMBLY

The inaugural meeting of the General Assembly, in which each of the United Nations holds one vote and no member has the right of veto, was held in London Jan. 10-Feb. 14, 1946. and dealt primarily with problems of organization. As its President, the Assembly elected the Belgian Foreign Minister Paul-Henri Spaak, and shortly thereafter it created six main committees to consider substantive items appearing on the agenda of the Assembly. Among the other important administrative decisions the Assembly made in connection with its task of organizing the United Nations into an effective working machine were the choice of New York as the interim headquarters for the United Nations, and the election of Trygve Lie of Norway, who had the support of Russia, as the United Nations Secretary-General. Under the Charter, the Secretary-General holds extraordinary powers but he has thus far asserted them warily. In addition to Lie's own staff, there were approximately 2,000 persons on the United Nations payroll during 1946, and they were divided, under eight assistant secretaries-general, into eight departments.

The first meeting of the General Assembly in the United States was held at the Assembly's temporary headquarters in Flushing, Long Island, from Oct. 23 to Dec. 15. The session was a remarkably active one, and during the course of its meetings resolutions were passed on 73 subjects which ranged from matters of great importance to organizational details. The most significant achievements of the Assembly may be summarized as follows:

DISARMAMENT

In the first step taken by any international authority toward world disarmament, the Assembly unanimously adopted a resolution declaring the necessity of an early general regulation and reduction of armaments and armed forces. This proposal was originally made by the Soviet delegation during the early days of the session. As finally adopted by the Assembly Dec. 14, the resolution recommended that the Security Council give prompt consideration to the formulation of practical measures needed to bring about the reduction and regulation of armaments and armed forces and to assure that such regulation would be observed by all participants. After formulating these plans, the Security Council was instructed to submit them to a special session of the Assembly, which in turn would present them to the signatory states for ratification.

The core of this significant decision of the Assembly was the provision that the international system of inspection and control shall be "within the framework" of the Security Council, as urged by Russia, but that the special organs required shall derive their powers and status from the conventions establishing them, as suggested by Australia and Canada. According to Secretary of State Byrnes' statement to the Assembly Dec. 13, the United States recognizes that the veto right on the Security Council applies to the drafting of these conventions. The United States hopes, however, that these conventions will not include the veto power in the international system of inspection and control.

In order to make sure that disarmament would be directed toward the major weapons of modern warfare, the disarmament recommendation further provided that the Security Council should expedite consideration of the work of the Atomic Energy Commission on conventions, including the prohibition of atomic and other major weapons adaptable to mass destruction.

QUESTION OF THE VETO BY THE GREAT POWERS

The Assembly debated at length the controversial subject of the great powers' right of veto in the Security Council. (As provided in Article 27 of the Charter, the decisions of the Security Council on all but procedural matters must be made by an affirmative vote of seven members, including the concurring votes of the permanent members.) In a resolution adopted Dec. 13 by a vote of 36 to 6, with 11 abstentions, the Assembly earnestly requested the great powers to use their special voting privilege in such a way as not to impede the Council from reaching decisions promptly. The Assembly refrained, however, from censuring past use of the veto, as had been proposed by Australia.

RELATIONS WITH SPAIN

When the Assembly turned to the subject of Spain, upon which the Security Council had been unable to reach agreement it proved that it was prepared to intervene in Spanish internal affairs to a somewhat greater extent than the Council had been. Noting that the Franco government had been imposed by force on the Spanish people with the aid of the Axis powers, the Assembly recommended that Spain be debarred from membership in international agencies established by the United Nations until it formed a new and acceptable government. The Assembly further recommended that, if within a reasonable time Spain failed to establish a freely chosen and representative regime, the Security Council should consider measures which could be taken to remedy this situation. Most important, the Assembly recommended that all members of the United Nations should immediately recall from Madrid their ambassadors and ministers and that the members should report to the Secretary-General what action they had taken in this regard.

RELIEF

In the controversial fields of relief and refugees the Assembly proved unable to reconcile the divergencies of views between East and West. In spite of opposition by Russia and other countries receiving relief from UNRRA, which was scheduled to terminate its activities at the end of 1946, the Assembly accepted the arguments of the United States. This country, which had furnished 72 per cent of UNRRA funds, opposed the creation of a new international agency for the completion of remaining relief tasks and insisted that henceforth nations requiring special aid should negotiate directly with the countries capable of supplying it. Under these conditions the Assembly merely recommended that the food-producing countries take certain measures to increase grain output, to improve transportation facilities for cereals and other basic foodstuffs, and to increase exports to countries suffering from food shortages. Industrial countries were likewise urged to help food-producing areas by supplying them with agricultural equipment and by facilitating the construction in undeveloped countries of small factories and workshops for the manufacture and repair of essential farming equipment. The Secretariat of the UN was also designated as a clearing-house for informal consultations on existing relief needs and available supplies, and a ten-nation technical committee was named to assess the world food situation.

INTERNATIONAL REFUGEE ORGANIZATION

To provide a solution to the problem of the hundreds of thousands of refugees and displaced persons still remaining in the British and American zones of Germany, the Assembly approved a constitution for a temporary specialized United Nations agency to be known as the International Refugee Organization. The debates leading to acceptance of a constitution for the IRO were long and arduous, and the constitution was finally adopted by a vote of 30 to 5, with 18 abstentions. Russia, the Byelorrussian SSR, Poland, the Ukrainian SSR, and Yugoslavia attacked the proposed constitution on the grounds that "refugees" and "displaced persons" who refused to return to various eastern European countries because they did not like the Leftist governments in those states did not deserve international aid. These countries of origin also argued that their reconstruction was being hindered by a shortage of labor and that they therefore had the right to prevent their citizens from expatriating themselves. The Western powers, on the other hand, felt that no refugee or displaced person should be compelled to return to his country of origin if he expressed valid objections to returning. These states accordingly insisted that the IRO should provide for resettlement as well as repatriation. It was evident, however, that the determined opposition of Russia and some of its neighbors to the proposed resettlement of persons who refused to return to their old homes might prove a stumbling-block to the work of the IRO.

INDIAN PROBLEM IN THE UNION OF SOUTH AFRICA

In one of its most important actions the Assembly, by a two-thirds majority, criticized the Union of South Africa's policies of discrimination toward its Indian population and declared that the "treatment of Indians in the Union should be in conformity with the international obligations under the agreements concluded between the two Governments and the relevant provisions of the Charter." The Assembly also requested that the two governments report to it upon the measures they had adopted to this effect.

The Assembly's decision to condemn racial discrimination against the Indians in South Africa represented a victory for the point of view advanced by India that the failure on the part of a given country to accord fundamental human rights and freedoms to its foreign population creates international tension and thus is a matter of concern to the United Nations. In this particular case, as India pointed out, South Africa's treatment of its Indian minority had provoked retaliation by India, with the result that relations between the two countries had been completely broken. South Africa, on the other hand, unsuccessfully maintained that the question of proper treatment for its Indian minority was exclusively within her domestic jurisdiction and that the Assembly was therefore not competent to deal with it.

PERMANENT UN SITE IN NEW YORK

The General Assembly also made numerous important organizational arrangements for the United Nations. Among these arrangements, that of determining the permanent location of United Nations headquarters was one of the most notable. On Dec. 14, the Assembly voted in favor of accepting the site in New York, valued at $8,500,000 and including approximately 17 acres on the East River, which John D. Rockefeller offered to the United Nations as a gift. This decision brought to a close months of search for a permanent site during which representatives of the United Nations travelled thousands of miles in the United States to report on a number of recommended locations which included San Francisco, Philadelphia, Westchester County of New York State, Long Island, and Boston.

TRUSTEESHIP COUNCIL

The Trusteeship Council, last of the main organs of the United Nations to be established, was set up by the General Assembly following its acceptance of eight trusteeship agreements covering as many former League mandates. Since these and other areas most frequently mentioned as possible "trust territories" included areas of great economic and strategic importance, the entire subject of trusteeship formed one of the most delicate questions considered by the Assembly.

The first category of territories which entered into the Assembly's discussions of the trusteeship system was that of the former German colonies which had been converted into mandates and held by various Allied powers following the First World War. With the exception of South Africa, the nations holding these territories submitted to the Assembly trusteeship agreements whereby the mandatory power became the administering authority. The nations which thus transformed their former mandates into "trust territories" were Great Britain (British Cameroons, British Togoland, and Tanganyika), France (French Cameroons and French Togoland), Belgium (Ruanda-Urundi), New Zealand (Western Samoa), and Australia (New Guinea).

The only mandatory power which refused to submit a trusteeship agreement was the Union of South Africa, which declared its intention to annex the mandate of Southwest Africa. Although the Assembly found that it had no power whereby it could force South Africa to reconsider its position, it did express itself almost unanimously against annexation and recommended that the government in Johannesburg submit a trusteeship agreement covering Southwest Africa.

The second group of territories discussed in connection with the establishment of the trusteeship system comprised the Pacific islands which had been mandated to Japan after the First World War and were at the time occupied by American forces. The original position of the United States in connection with these islands, which included the Marianas, Marshalls, and Carolines, was that they were "strategic areas," and hence should be placed under the jurisdiction of the Security Council, in which the United States had the power of veto. In order, however, to advance the Assembly's work on the trusteeship problem, the United States finally gave an implied pledge to consider placing at least some of the islands under the Trusteeship Council.

In the third category of territories connected with the establishment of the truteeship system were the former Italian colonies in Africa—Libya, Eritrea, Italian Somaliland—which were currently occupied by Britain. Under the terms of the peace treaty which the Allies negotiated with Italy in 1946, these colonies were to remain under British control until a year after the date the peace settlement becomes effective. At that time the Big Four are to make a final disposition of the colonies, and if they should be unable to reach an agreement within one year, the question of the ultimate disposal will be decided by the United Nations General Assembly, with advance concurrence by the Big Four.

Although the number of territories actually placed under trusteeship was smaller than had originally been hoped, the Assembly proceeded to establish a Trusteeship Council to administer the new "trust territories." The members of the Council, which was instructed to hold its first meeting not later than March 15, 1947, included the states administering trust territories—Australia, Belgium, France, New Zealand, and the United Kingdom. Other permanent members of the Security Council were the United States, USSR, and China. The countries elected by the General Assembly for three years to balance the administering and non-administering powers on the Trusteeship Council were Iraq and Mexico.

Although Russia voted against the trusteeship agreements submitted to the General Assembly on the grounds that all members of the Security Council and Trusteeship Council, rather than the mandatory power, had the right to determine the terms of trusteeship, it became, by virtue of its position as a permanent member of the Security Council a member of the Trusteeship Council.

The objectives of the new Trusteeship Council were "to further international peace and security, to promote the political, economic, social and educational advancement of the inhabitants of the trust territories," and to help them to their ultimate independence, as well as to encourage respect for human rights. To achieve these goals the Council was empowered to ask for periodic reports from the administering authority; to accept petitions and examine them in consultation with the administering authority; and to send out inspectors to the territories at times agreed upon with the administering authority. In this last respect, the Trusteeship Council was granted power that the old League of Nations Mandates Commission had not possessed. However, except for the fact that all members of the United Nations are committed to the goals laid down in the Charter, the Council has no power to enforce compliance with its standards for "trust territories."

NON-SELF-GOVERNING TERRITORIES

The Assembly also discussed measures to implement the Charter's provisions relating to non-self-governing territories which were not placed under trusteeship. The Charter's provision that members responsible for administering these territories shall send to the Secretary-General regular reports on the economic, social, and educational conditions in the territories. was the subject of debate within the Assembly. In general, the representatives of countries administering non-self-governing territories held that the Secretary-General should merely summarize, analyze, and classify this information and include it in a report to the Assembly, which could then determine what action, if any, should be taken by the United Nations. Other members, however, contended that an *ad hoc* committee should be established to review the Secretary-General's summary and analysis, with a view to aiding the Assembly in its examination of the information, and this view prevailed. As a result, the Assembly established a committee to be composed of those countries scheduled to submit information on non-self-governing territories — Australia, Belgium, Denmark, France, the Netherlands, New Zealand, United Kingdom, and the United States—and an equal number of other states elected by the Assembly—Brazil, China, Cuba, Egypt, India, Philippines, the USSR and Uruguay.

THE ECONOMIC AND SOCIAL COUNCIL AND UNITED NATIONS SPECIALIZED AGENCIES

The Economic and Social Council, which is under the authority of the General Assembly and is charged with facilitating the work of the United Nations in the realm of the broad social and economic objectives stated in the Charter, held three sessions during 1946 and made numerous studies and recommendations to the Assembly. Like other United Nations organs, the Economic and Social Council found it difficult to implement agreements on social and economic subjects without infringing upon the sovereignty of the individual member states. Nevertheless, the Council succeeded in drafting constitutions for the proposed World Health Organization, the International Refugee Organization, and the International Trade Organization. In order to coordinate the activities of specialized agencies already in existence, the Council also conducted negotiations for bringing the ILO (International Labor Office), UNESCO (United Nations Educational, Scientific and Cultural Organization), PICAO (Provisional International Civil Aviation Organization), and FAO (Food and Agriculture Organization) into a formal relationship with the General Assembly. Moreover, as the only organ of the United Nations authorized to cooperate with non-governmental national and international organizations concerned with economic and social problems, the Council provided for close cooperation with the World Federation of Trade Unions, International Cooperative Alliance, American Federation of Labor, and International Chamber of Commerce by giving these bodies consultative status.

FIRST CONFERENCE OF UNESCO

The United Nations Educational, Scientific and Cultural Organization, designed by the Charter to foster international intellectual cooperation, was established by a conference in London in November 1945, in which 41 nations participated. A detailed program was drawn up at that time and permanent headquarters were set up in Paris in 1946.

Among the aims of UNESCO are the promotion of international agreements for the free exchange of information and ideas throughout the world, and assisting members, at their request, in developing educational activities; the institution of collaboration among nations to advance equality of educational opportunity; and the assuring of the conservation and production of the world's inheritance of books, works of art, and the monuments of history and science.

At the first general conference of UNESCO, held in Paris during November and December, the view was adopted that the organization's projects should be highly practical and few in number at the beginning in order not to overtax its 1947 operating budget of $6,000,000. Among the major problems which UNESCO agreed to begin to tackle at once were illiteracy and the establishment of world-wide minimum standards of education; the barriers that now obstruct the free flow of communications among nations; and the lack of world-wide broadcasting facilities under international auspices. An international broadcasting network, members of UNESCO hoped, might bring to people everywhere an account of the history, achievements, problems, and hopes of other peoples. A somewhat different kind of enterprise was that proposed in connection with the International Institute of the Amazon. This organization was conceived by UNESCO as a means of bringing together scientists from many nations and fields of science to study the problems of food, disease, and natural resources of a specific area in order to bring their knowledge to bear upon the malnutrition and backwardness which have characterized the tropical regions of the world.

FAO AND PROPOSED WORLD FOOD BOARD

The established aims of the Food and Agriculture Organization, which was organized at Hot Springs, Virginia, in May 1943, as a permanent United Nations agency, are to raise the levels of nutrition in the world, improve the efficiency of production and distribution, and improve the condition of rural populations. In an attempt to set up a long-range program for sharing the food of the world's productive nations with countries which suffer periodically from droughts, floods, or economic dislocations, the annual FAO Conference, which met at Copenhagen in September 1946, discussed the formation of a World Food Board to maintain a world food reserve. During the remainder of the autumn a Preparatory Commission on World Food Proposals studied the possibilities of establishing such a Board, and it had not completed its work by the end of the year. It was clear, however, before a World Food Board could be established, that a balance would have to be struck between those nations, such as Britain, which expressed confidence in national and international economic planning, and those countries, led by the United States, which emphasized national enlightenment rather than planning as a means for achieving an expanded and stable level of world food production.

ILO AND THE UNITED NATIONS

Created at the Paris Peace Conference in 1919 and inherited from the League of Nations, the International Labor Organization made a formal agreement with the United Nations during 1946 whereby its work was integrated with that of the Economic and Social Council. Though government-sponsored, the national delegations to the ILO include representatives not only of government but of management and organized labor. Its purpose is to promote social justice in the world, and to this end it concludes international agreements with national governments. While not all proposed ILO agreements have been ratified and fewer have been scrupulously observed, it is generally conceded that the ILO is having at least some influence in improving working conditions.

TECHNICAL WORK OF PICAO

The Provisional International Civil Aviation Organization, which was formed by representatives of 54 nations who met in Chicago in November 1944, continued during 1946 to draft programs for unifying the different and confusing aviation procedures maintained by various countries. This highly technical work was carried on by experts at a series of conferences in Washington, Cairo, and Montreal.

WORLD BANK

Established at the Bretton Woods Conference in July 1944 and supported by all the Big Four powers except the Soviet Union, the International Bank for Reconstruction and Development was created for the purpose of making loans to nations for post-war reconstruction and the development of member countries. Not designed to compete with private bankers, the Bank, which has a total potential capital of $8,000,000,000, is intended to make loans only where private bankers feel themselves unable to assume the risk involved. The process of recruiting personnel for the Bank proceeded slowly during 1946, with the result that the Bank was as yet not prepared to handle loan applications. Moreover, with the resignation of the Bank's president, Eugene Meyer, in November, the prospects for speedy action by the Bank were further reduced. However, it is generally agreed that the real test of the Bank will come when the institution is obliged to determine whether political considerations should be permitted to enter into its decisions on petitions for loans.

WORLD COURT

The International Court of Justice, successor to the League of Nations' Permanent Court of International Justice, was formally opened April 18, 1946. The 15-judge court, whose members were elected Feb. 6, 1946 in concurrent voting by the General Assembly and the Security Council, is headed by Dr. José Gustavo Guerrero of El Salvador, and is seated at The Hague. The countries represented on the Court for nine-year terms are Brazil, Chile, El Salvador, France, and Great Britain; for six-year terms, Belgium, Mexico, Norway, Soviet Union and United States; for three-year terms, Canada, China, Egypt, Poland, and Yugoslavia. The Court has thus far heard no cases. Most of its time during 1946 was given over to evolving rules of procedure and choosing its Secretariat.

THE OUTLOOK

The experience of the United Nations during its first year of activity indicated that the future of the elaborate organization depended primarily upon the success of American, British, and Russian diplomacy in reaching some kind of working agreement. It was clear at the end of 1946 that at best the United Nations will eventually serve as a vehicle which can be used by the great powers to achieve unity among themselves, but at worst it is likely to serve as a rallying point against any nation or group of nations that consistently defies its principles and attempts to make war on the world.

How effective the organization will be in dealing with political disputes among the great powers depends largely on the willingness of all the powers to back up the principles of the United Nations Charter, in and out of the United Nations agencies, and with or without the veto. If they all demonstrate that they are not going to permit any technicalities of the Charter to relieve them of their agreement to support the principles and purposes of the Charter, then the United Nations organization can work as a brake on any aggressor, large or small, even if a great power attempts to cast a veto in its own defense.

THE UNITED STATES AND THE PEACE TREATIES

By Winifred N. Hadsel
Research Associate, Foreign Policy Association

PEACE SETTLEMENTS WITH AXIS SATELLITE STATES

At the three sessions of the Council of Foreign Ministers and the general Peace Conference of 21 nations which were held during 1946, Secretary of State James F. Byrnes continued to press for the speedy conclusion of peace settlements with the five former Axis satellite states, and on Dec. 12, 1946, the treaties were finally completed. Secretary Byrnes, on the eve of his resignation as Secretary of State, signed the treaties with Rumania, Bulgaria, Hungary, and Italy for the United States (Jan. 20, 1947). Since the United States had not been at war with Finland, he did not sign the treaty the Council of Foreign Ministers had prepared for that country. The date for the final signature of the treaties by all the Allies and the five former enemy states was set for Feb. 10, 1947, in Paris.

The procedure whereby the peace treaties with the minor Axis powers were drawn up was outlined at the Potsdam Conference of the Big Three during August 1945, 19 months before the date of the final signing of the agreements. According to the instructions issued at Potsdam, the Council of Foreign Ministers, representing the United States, Britain, Russia, France, and China, were "to continue the necessary preparatory work for the peace settlements and to take up other matters which may from time to time be referred to the Council by agreement of the governments participating in the Council."

DEADLOCK OVER PROCEDURAL ISSUES

The first session of the Council of Foreign Ministers, which was held in London, Sept. 11–Oct. 2, 1945, broke down over procedural issues, and no discussion of the peace treaties themselves took place at that time. The Soviet delegation took the view that the "preparatory and exploratory" work of the Council should be restricted to the signatories of the surrender terms in question. According to this interpretation, China and France, whose representatives were present in London in accordance with the Potsdam agreement, would not be permitted to take part in the negotiations. The only exception Soviet Foreign Minister Molotov was prepared to make was that France might be permitted to consider the terms of the treaty with Italy. Secretary Byrnes, on the other hand, maintained that the Potsdam agreements "contemplated a broadening out of the participants before the final conclusion of a peace treaty," and he therefore proposed that France and China be asked to accept Russia's position, provided the Soviet Union agreed to the convocation of a broadly representative peace conference before the end of 1945.

It was the opinion of the United States, Secretary Byrnes declared, that "in an interdependent, democratic world, peace can not be the exclusive concern of a few presently powerful states; that, unless we were to revert to a world of isolationism none of the states which we wanted invited to the peace conference could be said to be not directly concerned in the peace. We urged that those states, both large and small, which had fought and suffered in the war must make the peace. This has been a peoples' war and it must be a peoples' peace." In reply to this American plea for a general peace conference the Soviet delegation declared that it could not agree to the proposal until M. Molotov and his aides had returned to Moscow and consulted Premier Stalin.

The question as to which nations

should participate in drafting the treaties was settled during a meeting of the Foreign Ministers of the United States, Britain, and Russia in Moscow, Dec. 16-25, 1945. At that conference the Soviet view that only members of the Council of Foreign Ministers who were signatories of the armistice terms with the five former satellite states should participate in drawing up the peace treaties, prevailed. This meant that the terms of the peace treaty with Italy were to be drafted by the United States, Russia, Britain, and France. The terms of the peace treaties with Rumania, Bulgaria, and Hungary were to be drawn up by the United States, Britain, and Russia, while the terms of the treaty with Finland were to be settled by Britain and Russia, since the United States had not declared war on Finland and hence had not signed an armistice treaty with that country.

As a concession to the American and British points of view on peacemaking procedure, Russia agreed that the Council might "invite other members of the Council to participate on questions directly concerning them." Of greater importance, however, was Russia's acceptance of Secretary Byrnes' recommendation that a conference for the purpose of considering the drafts proposed by the Council of Foreign Ministers be called not later than May 1, 1946, this conference to consist not only of the five members of the Council of Foreign Ministers, but include "all members of the United Nations which actively waged war with substantial military force against European enemy states." These nations were listed as follows: Australia, Belgium, Byelo-russian SSR, Brazil, Canada, Czechoslovakia, Ethiopia, Greece, India, the Netherlands, New Zealand, Norway, Poland, Union of South Africa, Yugoslavia, and Ukranian SSR.

DRAFTING THE PEACE TREATIES

Once basic procedural questions were settled, the drafting of the peace treaties could begin. However, when the deputies of the Foreign Ministers met in London during January 1946, to begin preliminary work on the treaties, they were able to reach only a few decisions on minor points. Little progress was made on such controversial issues as the future of Trieste, control of the Danube, disposal of the Italian colonies, and reparations.

The second session of the Council of Foreign Ministers, which met in Paris April 25–May 16, 1946, also found itself unable to agree either upon the leading issues arising in connection with the treaties or upon the date of the general peace conference, whose summoning was opposed by M. Molotov until agreement had been reached by the Big Four on "fundamental questions." As a result of these delays, Secretary Byrnes warned, in a radio report to the American public on the work of the conference, that the United States might have to adopt a new course of action. "When a world short of goods and short of food is crying for the return of conditions of peace," he declared, "we can not indefinitely delay the making of peace and the withdrawal of troops from occupied areas. The four Allied governments can not indefinitely delay the making of peace with countries which they have long ceased to fight, simply because they can not agree among themselves on peace terms."

In order to assure the speedy conclusion of the peace treaties, Byrnes stated that "the United States will feel obliged to request the General Assembly of the United Nations under Article 14 of the Charter to make recommendations with respect to the peace settlements" if a peace conference were not called during the summer of 1946. (Article 14 of the United Nations Charter provides: "Subject to the provisions of Article 12, the General Assembly may recommend measures for the peaceful adjustment of any situation, regardless of origin, which it deems likely to impair the general welfare or friendly relations among nations, including situations resulting from a violation of the provisions of the present Charter setting forth the purposes and principles of the United Nations.") Byrnes added, however, that he hoped it would be unnecessary for the United States to request the United Nations Assembly to take action on the peace treaties, and he expressed confidence that the peace conference would be held soon.

At the third session of the Council of Foreign Ministers, held in Paris June 15–July 12, 1946, agreement was reached upon a number of the controversial questions posed by the peace treaties, and on July 4 France, as the inviting power, was authorized to send invitations to the general Peace Conference. Before this session of the Council ended, however, M. Molotov insisted upon a point which, it seemed for a time, might lead to another period of extended debate among the great powers. He declared that the general Conference should follow rules drawn up by the Council of Foreign Ministers rather than those which it might formulate for itself. The Soviet Union thus indicated its concern lest the small nations invited to the Conference fundamentally change the arrangements tentatively agreed upon by the Big Four Foreign Ministers. The United States and Britain, on the other hand, hoped to give the smaller states a real voice in the making of the treaties, and they were disturbed by the Russian effort to curb the Conference even before it was convened.

According to the rules of procedure for the general Peace Conference, as agreed upon by the Big Four, July 8, 1946, a two-thirds majority was required on all major questions upon which the Council of Foreign Ministers had not already agreed, and a simple majority on matters of procedure. However, these rules did not make it entirely clear how much weight a decision of two-thirds of the Conference would have in determining the final action of the Foreign Ministers.

At the beginning of the Paris Conference (July 29–October 15, 1946) Paul-Henri Spaak of Belgium proposed that the Big Four should agree to be bound by any recommendations the Conference adopted by a two-thirds majority, even if these recommendations upset previous decisions of the Big Four. The adoption of this suggestion would have enabled a two-thirds majority of the Conference, rather than the Council of Foreign Ministers, to write important sections of the five peace treaties under consideration.

Secretary Byrnes immediately welcomed the Belgian suggestion and urged its acceptance as a means of permitting the 17 smaller countries present at the Conference to take an active part in arranging the peace settlement. M. Molotov, however, objected to the proposal, and successfully contended that the final responsibility for the drafting of all portions of the treaties must rest with the Big Four. Thus ended an effort on the part of the smaller powers, supported by the United States, to give the Paris Conference more than merely advisory functions. Thereafter the smaller nations could only hope that the Big Four might voluntarily heed the recommendations of the Conference, especially when they were made by a two-thirds majority and upon points which had not been previously agreed upon by the Council of Foreign Ministers.

The sessions of the Paris Peace Conference were held against a background of tension between Russia and the Western powers. While the delegates in the Luxembourg Palace were discussing the terms of peace with the former Axis satellites, they were constantly reminded by a series of controversies and incidents of the sharp differences between East and West. During the period the Conference was in session the United States and Russia expressed disagreement over such important issues as Germany, the Dardanelles, and foreign trading policies. Yugoslav attacks on American airplanes also embittered relations between the United States and the pro-Soviet regime in Belgrade. Closely linked with the Conference, moreover, was the Wallace–Byrnes controversy over the conduct of American foreign policy. (See "United States and Europe.")

As required by the rules laid down by the Big Four, the Paris Conference referred its recommendations to the Council of Foreign Ministers, which met Nov. 4–Dec. 12, 1946 in New York City. At this, the fourth session of the Council, the final drafting of the peace treaties was completed.

POSITIONS OF THE GREAT POWERS ON TRIESTE

The ancient and picturesque Adriatic port of Trieste, which had been under Austrian rule for 500 years before the First World War, except for a brief period in the Napoleonic era, and ceded to Italy in 1919, presented the most tangled of all the peacemaking issues. Not only was there a violent Italo-Yugoslav conflict over Trieste and Venezia Giulia, but there was bitter rivalry between Russia and the Western powers for control of this strategically important area. The Soviet Union, hoping to secure an outlet to the Mediterranean by way of the Adriatic Sea, supported Yugoslavia's claims to the port of Trieste and its hinterland. Britain and the United States, on the other hand, were unwilling to permit Russia to gain a key position on the Adriatic, and they accordingly supported Italy's claim Under these conditions it was hardly surprising that the four-power commission of experts which visited the disputed area during the spring of 1946 to investigate the Italo-Yugoslav frontier question failed to agree and instead proposed four different boundary lines.

The Russian members of the commission took the view that Venezia Giulia should be treated as an inseparable whole, in which case the Yugoslav population would unquestionably outnumber the Italian population. The representatives of the United States, Britain, and France contended, on the other hand, that the area should be divided in such a way as to leave a minimum of the smallest possible number of either Italians or Yugoslavs under alien rule. The American delegation further proposed that a plebiscite should determine the fate of the area lying between the two boundary lines suggested by the United States and the USSR. However, M. Molotov refused to hold a plebiscite unless it was applied to the entire area of Venezia Giulia.

At the third session of the Council of Foreign Ministers a compromise was finally reached whereby all territory east of a boundary line which the French had proposed would be ceded by Italy to Yugoslavia. According to this arrangement, approximately 3,000 square miles of territory, including the Izonzo Valley, Istria, and the ports of Pola and Fiume were to be ceded to Yugoslavia. The port of Trieste and its immediate hinterland, estimated at 300 square miles, were to form "The Free Territory of Trieste."

The Yugoslav representatives at the Paris Peace Conference attempted to secure a revision of this proposed Italo-Yugoslav frontier, and at the fourth session of the Council of Foreign Ministers in New York the representatives of both Yugoslavia and Italy sought support for their conflicting points of view. The Big Four nevertheless adhered to the "French line," and this boundary was accordingly written into the Italian peace treaty.

The willingness of both Russia and the Western powers to agree to the "French line" between Italy and Yugoslavia depended upon the attainment of a mutually satisfactory arrangement for the administration of the Free Territory of Trieste. Britain and the United States pressed for the administration of the area by a United Nations governor with strong powers, subject to the direction of the Security Council rather than to that of a popularly elected Trieste Assembly. In this way the Western Allies hoped to prevent a local contest for power between pro-Yugoslav and pro-Italian forces which might lead to the establishment of Yugoslav control over the port. Conversely, Russia wished to have the

Free Territory administered by a governor who would be responsible to a popular Assembly elected in the Free Territory and who would merely report to the United Nations Security Council.

At the Paris Conference the position of Britain and the United States on the question of how the Free Territory of Trieste should be administered was upheld by a vote of 15 to 6. However, at the ensuing session of the Council of Foreign Ministers, a compromise was worked out between the Soviet and Western points of view. According to this arrangement the governor was to be appointed by the Security Council, "after consultation with the Italian and Yugoslav Governments," and he was also made directly responsible to the Security Council. Despite the existence of a local Council of Government, a Popular Assembly elected by the people of the territory, and a Judiciary, the governor was given broad executive and emergency powers. In matters affecting the integrity and security of the territory and the civic and human rights of its inhabitants, he was empowered to issue decrees with the force of law and to suspend local administrative measures which in his opinion conflicted with the permanent Statute of the Free Territory.

The decision to turn Trieste into an international free zone under a governor appointed by the United Nations satisfied none of the Big Four, and it was generally feared in Washington at least, that this arrangement constituted the main source of potential future friction in connection with the peace treaties. Not only did the decision to internationalize the area take away from Italy approximately 330,000 Italian citizens and place them under a governor to be appointed by the United Nations, but it failed to guarantee the economic future of the port. In the past the prosperity of Trieste has depended on the support not only of Italy but of central and eastern Europe. If the new pro-Soviet states in this area should refuse to make a series of export and import agreements with the Free Territory, the area might become an economic as well as a political liability to the United Nations, as the Free Territory of Danzig was to the League of Nations after the First World War.

THE DANUBE

The Danube, which has been controlled by Russia since the end of the war because of the presence of Red Army troops in Hungary, Rumania, and Bulgaria, presented another controversial peacemaking issue. Britain and the United States contended that there should be freedom of navigation of the Danube not only for riparian states but for all countries interested in using this international waterway. The Western powers argued further that the Big Four should call a conference of the major powers, as well as the nations through which the river flows, in six months to set up an international regime for the control of Danubian traffic. In order to strengthen this international regime, the United States and Britain wished to embody the provisions for its establishment in the peace settlements rather than in a separate agreement, on the assumption that an agreement included in the treaties would carry particular weight. Russia, on the other hand, contended that there was no need to include references to the Danube or its navigation in any of the treaties and argued that the administration of the river's navigation was of concern to none but the riparian states themselves. At the Paris Conference, votes of 15 to 6 upheld the recommendations of Britain and the United States concerning the Danube, but at the final peace-drafting session of the Council of Foreign Ministers, the Western powers agreed to a compromise with the Soviet Union. According to this compromise, a provision for the free navigation of the Danube was written into the treaties with Rumania, Bulgaria, and Hungary. "Navigation on the Danube," according to this provision, "shall be free and open for nations, vessels of commerce and goods of all states on a footing of equality in port and navigation charges and conditions for merchant shipping, the foregoing not to apply to ports if in the same state." The last phrase was intended to prevent foreign ships from competing with local shipping within the territorial waters of the states concerned. However, in deference to the Soviet Union's objections to the inclusion in the peace treaties of arrangements for the establishment of an international regime for the Danube, the Western powers agreed to a separate Allied declaration calling for a Danube conference. According to this declaration the conference on the Danube will be held six months after the treaties come into force, and the participating states will be the Big Four, Ukranian SSR, and the riparian states, Rumania, Bulgaria, Yugoslavia, Hungary, Czechoslovakia, and Austria when the treaty with the latter former enemy country has been negotiated and signed.

SETTLEMENT OF DISPUTES ARISING UNDER THE TREATIES

On the question of how differences encountered in implementing the treaty provisions should be settled, the Western powers and Russia also found themselves at odds during the extended treaty negotiations. Britain and the United States urged that disputes should ultimately be sent to the International Court of Justice, while Russia insisted that the court of last resort should be a council of the Ambassadors of the Big Four in the capital of the country involved. At the Paris Peace Conference the British and American view was upheld by a vote of 15 to 6, but when the Russians refused to accept this proposal, the Council of Foreign Ministers found it necessary to strike a compromise. According to the agreement worked out in New York and included in the five peace treaties, economic disputes and disputes over interpretation and execution of the treaty clauses will be handled in three stages: first, by direct negotiation between the two disputants; second, if after two months they have arrived at no decision, the dispute shall be referred to the Ambassadors of the Big Four; third, if the Ambassadors are unable to reach a settlement within two months, either party to the dispute may ask the Secretary General of the United Nations to appoint a neutral umpire to make a binding decision.

REPARATIONS

One of the most sharply disputed points in connection with the discussion of the peace treaties was the amount of reparations which the various former Axis satellites should be required to pay. In connection with Italy particularly, the United States declared in the spring of 1946, that "in the interest of peace," it preferred to dismiss reparations charges, pointing out that it had already advanced directly or indirectly $900,000,000 to tide the Italian people over their economic crisis. After the second session of the Council of Foreign Ministers, however, Secretary Byrnes indicated that the United States would be willing to agree to "limited reparations," provided they did not deprive Italy of resources "necessary to enable her to subsist without external assistance." Under the agreement reached by the Big Four on the eve of the Paris Conference, Italy was to pay Russia the sum of $100,000,000, largely out of current production, over a period of seven years. Italy was not required to make payments from current production during the first two years, however, and Russia was to furnish the raw materials for the goods which Italy thus produced for Soviet reconstruction. To the Italians this latter provision was particularly objectionable since it seemed to offer Russia a possible means of interfering in Italian economic life on the pretext of collecting reparations.

During the final stages of the drafting of the Italian treaty the United States made one of the most important concessions at the Big Four meetings when it agreed that Italy, in addition to paying $100,000,000 reparations to Russia, should pay an additional $260,000,000 to Greece, Yugoslavia, Albania, and Ethiopia. In the case of the other former satellite states, particularly Hungary and Finland, the United States attempted to secure a reduction in reparations, but without success.

From the point of view of the former Axis satellites the reparations called for by the treaties represented a heavy burden, and none of the Allied powers defended the claims they made as being within the probable capacity of the former enemy nations to pay. From the point of view of the receiving powers, the provisions for reparations were also far from satisfactory. Even in the case of the Soviet Union, the largest recipient, the $900,000,000 worth of reparations it was scheduled to receive from Italy, Finland, Hungary, and Rumania represented only token payments for the vast damage the USSR had suffered during the war.

The problem of how much compensation should be paid to Allied property owners who had suffered wartime losses in former enemy states was also a source of inter-Allied debate. The United States favored 25 per cent compensation, as did the Soviet Union, while France and Britain, whose pre-war property holdings in the Balkans were considerably larger, pressed for 75 per cent compensation. After months of deadlock on this question, the United States and Russia finally agreed to 66 2/3 per cent compensation in the case of all five former Axis satellite states.

SUMMARY OF THE PEACE TREATY WITH ITALY

Territorial Changes.—France was awarded the small Alpine districts around Bridga and Tenda, near Nice, containing important hydroelectric developments. The French also secured small border rectifications in the region of the Little St. Bernard Pass, the Mont Cenis Plateau, and Mont Thabor.

Greece secured the Dodecanese Islands, located in the eastern Aegean. It was provided that these islands should remain demilitarized.

Albania received the Island of Saseno, situated at the narrowest point of the Strait of Otranto.

Yugoslavia secured the Adriatic ports of Pola and Fiume, two-thirds of the Istrun Peninsula, and most of Venezia Giulia, to the north of Trieste.

African Colonies.—Italy renounced all rights to its African colonies of Libya, Eritrea, and Italian Somaliland, which, pending their final disposal, are to remain under British military control. The final disposition of these possessions is to be determined by the Big Four powers within one year after the Italian treaty comes into effect. If the Big Four should be unable to agree within a year on the future of the colonies, the question of the ultimate disposal will be decided by the United Nations General Assembly, with advance concurrence by the Big Four.

Trieste.—Trieste was constituted a Free Port in which special harbor facilities were to be provided for both Italy and Yugoslavia. The city and its immediate hinterland were formed into a demilitarized and neutral Free Territory, in which the governor, who was made directly responsible to the United Nations Security Council, was given sweeping executive and emergency powers.

Military Clauses.—Italy's permanent frontier fortifications were to be destroyed, and Pantellaria and other formerly fortified islands were to be demilitarized.

The Italian army was limited to a force of 185,000 combat, service and overhead personnel and 65,000 Carabinieri (armed police).

The Italian navy was restricted to two battleships, four cruisers, four destroyers, 16 motor torpedo boats, and 19 corvettes, with a maximum naval personnel of 25,000 officers and men. Remaining units were to be placed at the disposal of the governments of the Soviet Union, United States, Britain, and France within three months after the coming into effect of the peace treaty. These provisions concerning the Italian Navy constituted the most important of the military clauses written by the Allies in the peace treaties, for they reduced the Italian navy to a point that would prohibit Italy from exercising anything resembling her old naval influence.

The Italian air force was limited to 200 fighter and reconnaissance aircraft and 150 transport and liaison aircraft. and air force personnel was restricted to a total of 25,000. Bombers were prohibited.

Reparations. — Italy's total reparations bill was set at $360,000,000, to be paid largely in goods over a period of seven years. Of the total bill, $100,000,000 is to be paid to the Soviet Union from such sources as equipment designed for the production of war material, Italian assets in Rumania, Bulgaria, and Hungary, and, after the first two years, current industrial production. In order to facilitate the collection of reparations from this last source, the Soviet Union agreed to furnish to Italy, on commercial terms, the materials which are normally imported into Italy and which are needed for industrial production. Payments for these materials shall be made by deducting the value of the materials furnished from the value of the goods delivered to the USSR.

In addition to paying $100,000,000 reparations to Russia, Italy is to pay $125,000,000 to Yugoslavia, $105,000,000 to Greece, $25,000,000 to Ethiopia and $5,000,000 to Albania. The quantities and types of goods and services to be delivered to these smaller powers shall be determined by agreements between the governments entitled to receive reparation and the Italian government. The treaty also declares that deliveries shall be scheduled in such a way as to avoid interference with the economic reconstruction of Italy.

HUNGARY

Territorial Changes. — Rumania was awarded Northern Transylvania. Rumania had received this territory, which has a predominantly Rumanian population, from Hungary under the Treaty of Trianon of 1920, but had been forced to relinquish it to Hungary at the demand of Hitler in 1940. Czechoslovakia was awarded a small Danubian bridgehead and three villages on the southern bank of the Danube.

Military Clauses.—The Hungarian army was limited to 65,000 men; the air force to 90 planes and 5,000 men. Bombers were prohibited.

Reparations. — Total reparations payments in kind of $300,000,000 are to be made over an eight-year period, from Jan. 20, 1945. The reparations are to be divided as follows: $200,000,000 to the Soviet Union, $50,000,000 to Yugoslavia, and $50,000,000 to Czechoslovakia.

BULGARIA

Territorial Changes.—Bulgaria lost no territory, and it acquired southern Dobruja from Rumania. Despite Greek claims to considerable frontier adjustments and a demand for three small changes as a protection for the seaport of Salonika, the Council of Foreign Ministers decided to make no change in the pre-war boundary between Greece and Bulgaria because of the tense situation on the Greek-Bulgarian frontier.

Military Clauses.—The army was limited to 55,000 troops, the navy to 7,250 tons and 3,500 men, the air force to 90 aircraft and 5,200 men, with bombers prohibited. Fortifications along the Greek-Bulgarian frontier were forbidden.

Reparations.—The treaty provided that Bulgaria should compensate Yugoslavia and Greece for the losses resulting from its military operations and occupation. At the same time, however, the parties to the treaty agreed that, in view of Bulgaria's withdrawal from the war against the United Nations and its participation in the war against Germany, Bulgaria should pay only $70,000,000 in reparations over a period of eight years beginning from the coming into force of the peace treaty. Of this sum, $45,000,000 was to be paid to Greece and $25,000,000 to Yugoslavia.

RUMANIA

Territorial Changes. — The Soviet Union secured Bessarabia, which had formed a part of the Czarist Empire before the First World War, and Northern Bukovina, which had belonged to the Austro-Hungarian Empire until 1918. Rumania was also obliged to cede the area of Southern Dobruja to Bulgaria. This territory which had been transferred by Bulgaria to Rumania in 1913 during the Balkan wars, and recovered by Bulgaria in 1918, had again been lost to Rumania, when the Treaty of Neuilly was made with Bulgaria in 1919.

Military Clauses.—The Rumanian army was limited to 120,000 troops of all types, the navy to 15,000 tons and 5,000 men, and the air force to 150 aircraft and 8,000 men. All bombers were prohibited.

Reparations.—Rumania is to pay a total of $300,000,000 in reparations to the Soviet Union over a period of eight years, from Sept. 12, 1944. Payment is to be made in oil products, grain, timber, seagoing and river craft, sundry machinery, and other commodities.

FINLAND

Territorial Changes. — Russia secured the Karelian Isthmus and the Arctic province of Petsamo, and a 50-year lease to the naval base at Porkkala.

Military Clauses. — More severe military restrictions were made upon Finland than upon any of the other former Axis satellites. The army was restricted to 34,400 men, the navy to 10,000 tons and 4,500 men, and the air force to 60 aircraft and 3,000 men, with bombers prohibited.

Reparations. — Finland was required to pay a total of $300,000,000 to Russia over a period of eight years from Sept. 19, 1944 in timber products, paper, cellulose, seagoing and river craft, sundry machinery, and other commodities.

CLAUSES COMMON TO ALL THE TREATIES

Withdrawal of Allied Troops.—All the treaties provided for the withdrawal of Allied troops within 90 days after the treaties went into force. In the case of Hungary and Rumania, however, Russia was permitted to maintain lines of communication through these countries with the Soviet-occupied zone of Austria. The number of troops Russia would be permitted to maintain for this purpose was unspecified. This meant that until a treaty was signed with Austria, Hungary and Rumania would remain under Soviet military occupation. In the case of the Free Territory of Trieste, moreover, the governor was authorized to decide within 90 days after the coming into effect of the Italian peace treaty whether Allied occupying troops were still required, and if not they were to be withdrawn within 45 days. If, on the other hand, he should decide that troops are still required, the British and American forces in Trieste would be retained until 45 days after he states that their presence is no longer required.

Forbidden Weapons.—All five of the former Axis satellites were forbidden to have atomic weapons, self-propelled or guided missiles, any guns with a range of more than 30 milimeters, and any non-contact type of mines or torpedoes capable of being manned.

Economic Clauses.—All five countries undertook to return property removed from the territory of any of the United Nations; to waive all claims against Allied powers arising from the war; to restore all legal rights and interests of United Nations and their nationals; to surrender any property or assets in Allied nations wanted for the settlement of war claims; to compensate two-thirds of the losses suffered by United Nations holders of property in the respective countries before the war.

Human Rights. — The treaties required all to take any measures needed to guarantee enjoyment of human rights and fundamental freedoms, including free speech, press, religion, political opinion, and public meetings. All five were also admonished to stamp out the remnants of Nazism and Fascism within their countries.

TOWARD PEACE WITH GERMANY AND AUSTRIA

Having reached agreement on the peace treaties with the former Axis satellites, the Big Four turned to the key problem of Germany and Austria. On Dec. 9, 1945, the Foreign Ministers decided to hold their fifth session in Moscow on March 10, 1947, for the purpose of discussing the peace settlement with the Germans and Austrians. As 1946 ended, therefore, the Allies were preparing to face an even more complex set of issues than that which had confronted them in connection with Italy and the Axis satellites.

THE UNITED STATES AND EUROPE

By Winifred N. Hadsel
Research Associate, Foreign Policy Association

U. S.–SOVIET POLICY

The major task confronting the United States in Europe during 1946 was that of bridging the gap between its own policies and those of the Soviet Union toward the Continent in order to establish a firm basis for world peace and security. The sharp differences between Moscow and Washington were underlined by Generalissimo Stalin when he declared in a speech to the Russian people on Feb. 9, 1946 that the "capitalist system breeds crises which lead to war." In the United States Senate, Senator Arthur H. Vandenberg (Mich.) promptly expressed concern over the apparent belief on the part of the Soviet leader that capitalism and communism were incompatible. In a speech on Feb. 27, Senator Vandenberg observed: "I read in every newspaper: 'What is Russia up to now?' It is the supreme conundrum of our time."

American official policy toward Russia was stated by Secretary of State James F. Byrnes on Feb. 28, 1946 when he remarked: "We will not and we can not stand aloof if force or the threat of force is used contrary to the purposes and principles of the (UN) Charter." This statement by Byrnes marked the beginning of what came to be known as the "firm" American attitude toward Russia. Throughout the negotiations on the peace treaties with the former Axis satellites and in other dealings with Russia, Secretary Byrnes adhered to this policy, and in doing so he received the support of the Administration and of Republican leaders as well.

THE WALLACE CONTROVERSY

On Sept. 12, however, Henry A. Wallace, then Secretary of Commerce and the only "left-wing" Democrat who remained in President Truman's Cabinet, made a speech at Madison Square Garden, New York City, strongly criticizing United States' policy toward Russia. Wallace seemed to suggest that the world should be divided into orbits and that the United States should not interfere in Russia's sphere any more than Russia should interfere in that of the United States. Although President Truman had previously approved Wallace's speech, he called for and received his resignation (Sept. 20) when the attack on Secretary Byrnes' policy caused a worldwide controversy as to how far the American people had reached fundamental agreement on the role of the United States in world affairs.

Either because of this indication that the United States intended to adhere to its firm policy toward Russia, or because of the Soviet Union's preoccupation with its own internal problems of reconstruction, Generalissimo Stalin made a statement on Sept. 24 which indicated a shift in Russian foreign policy. In a special and highly publicized interview, the Generalissimo declared that he saw "no threat of war," and he insisted that capitalism and communism could collaborate peacefully. He also hinted that Russia would welcome economic assistance from the West.

Following this statement by Stalin, there was a noticeable decline in tension between the USSR and the United States. Although the two major powers remained deadlocked on many important issues, a period of better feeling prevailed between Moscow and Washington during the last few months of 1946 than had existed at any time since the end of the war.

EASTERN EUROPE

Throughout 1946, however, the United States and Russia continued to find it difficult to reconcile their views as to the "democratic" nature of Communist-dominated regimes in eastern Europe. At the Moscow Conference of the Big Three Foreign Ministers in December 1945, the United States and Britain had attempted to secure the inclusion in the Bulgarian and Rumanian governments of important elements of the democratic opposition as the basis for American and British recognition of these former enemy states.

RUMANIA AND BULGARIA

In Rumania this effort met with a certain degree of success. During the first week of January 1946, two representatives of the Opposition parties were admitted to the government, and official assurances were given that free elections would be held. Accordingly, the United States and Britain recognized Rumania on Feb. 4, 1946. In Bulgaria, however, the Opposition leaders, in the belief that joining the government without guarantees of free elections would be tantamount to unconditional surrender, refused to accept an offer of the government which precluded any change in official policies. The Bulgarian government, supported by the Soviet Union, thereupon took the view that it had fulfilled its obligations under the Moscow agreement by making a proposal to the Opposition, whether or not the offer was accepted. The United States and Britain expressed their disagreement with this view on Feb. 22, and declared that recognition would not be forthcoming until two Opposition leaders joined the government on a mutually acceptable basis. The Bulgarian government, confident of Soviet backing, ignored the objections of the Western powers, and no further progress was made during the year toward removing Big Three differences over Bulgaria.

"FREE AND UNFETTERED ELECTIONS"

Repeated efforts by the United States to persuade the governments of Bulgaria, Rumania, and Poland to hold "free and unfettered elections," as provided in various Big Three agreements at the Yalta, Moscow, and Potsdam conferences, met with little success. In the case of the Bulgarian elections of Oct. 27, the United States issued no official comment, since the Bulgarian government had not secured American recognition following a pledge to hold free elections. The State Department indicated unofficially, however, that it did not regard the results of the poll—in which the Communists received 277 of the 465 seats in parliament, while the four other parties belonging to the Fatherland Front coalition won only 87 seats and the Opposition obtained 101 places—as an accurate reflection of Bulgarian sentiment.

In the case of the Rumanian elections of Nov. 19, the United States was more outspoken in its criticism. In these elections the Communist-controlled government bloc received 4,766,360 votes, while all other groups received 1,931,167 votes. In a formal statement issued on Nov. 26, Acting Secretary of State Dean Acheson charged the Rumanian government of electoral malpractices and refused to accept the voting as a fulfillment of Rumania's pledge to hold fair elections. Despite this American contention that Rumania had not complied with the promises on which United States recognition had been based, Washington did not sever diplomatic relations with Bucharest.

As the Polish government prepared to hold elections on Jan. 19, 1947, the United States notified the government in Warsaw, on Nov. 22, that it had received "disturbing reports" concerning the preparations for the elections. The American note firmly reminded the Polish government that the United States expected all anti-Nazi and democratic Polish parties to enjoy equal rights both in the electoral campaign and in the elections. Toward the end of the year, American journalists in Poland reported mass arrests of Opposition leaders and numerous attacks on Stanislav Mikolajczyk, the leader of the Peasant party, as the "tool" of "British and American imperialism" in Poland.

As the year ended, therefore, American efforts to secure "free and unfettered elections" in eastern Europe had failed in many important respects. The United States maintained hope, however, that Russia, if assured of security, might eventually be induced to permit greater political freedom in eastern Europe, and that local non-Communist groups might then be able to cooperate in establishing genuinely representative governments.

YUGOSLAVIA

Strained relations existed between the United States and Yugoslavia during most of 1946. On Aug. 19, five American airmen were killed when their unarmed plane was shot down over Yugoslavia by a Yugoslav fighter plane. The State Department, in a strongly worded note of Aug. 21, demanded indemnity from the Tito government and investigation of the circumstances attending the tragedy. The incident was formally closed Oct. 9, when the Yugoslav government assured the United States that orders had been given that American planes were not to be fired upon in the future and agreed to pay $150,000,000 indemnity for the loss of American lives and property.

During the later summer and autumn, additional friction developed between the United States and Yugoslavia as a result of the decision of the Yugoslav government to close the United States Information Service in Belgrade. The trial of Archbishop Aloysius Stepinatz, Roman Catholic Primate of Zagreb, on charges of wartime collaboration with the pro-Nazi Ustashi group, also incurred American protests. On Oct. 11, when the Yugoslav court pronounced the Archbishop guilty and sentenced him to 16 years in prison, Acting Secretary of State Acheson officially expressed "concern and deep worry" over the manner in which the trial had been conducted.

CZECHOSLOVAKIA

Relations between the United States and Czechoslovakia, which had traditionally been very close, also deteriorated during 1946. In September, the State Department cancelled $40,000,000 of a $50,000,000 loan the United States had extended to Prague for the purchase of United States Army surplus goods in Europe, and suspended negotiations for an additional $50,000,000 credit from the Export-Import Bank. One reason given by the United States for its action was that the Czechoslovak government had made plans for reselling U. S. Army surplus goods to Rumania without informing Washington. A more important explanation, however, was that offered by Secretary Byrnes Oct. 22, when he declared that the United States did not wish to extend loans to countries which might feel "enslaved" by these loans. This explanation was generally interpreted as a reference to the attacks which had recently been made by the Czechoslovak Communist press upon American "policies of economic imperialism" in eastern Europe.

GREECE

The United States, along with Great Britain and France, participated in the Allied Mission for Observing the Greek Elections on March 31, 1946. This Mission was formed in accord with the terms of the Yalta agreement, which provided that the major Allies should assist the liberated countries in holding free elections, if requested to do so by the nations concerned. Russia, however, refused to participate in observing the elections, on the ground that such observation would curb the sovereignty of Greece.

The Allied Mission, in its formal report, declared that the elections, in which the Populist (Royalist) party won a small majority, were "on the whole free and fair, and the results represent a true and valid verdict of the Greek people." At the same time, the Mission acknowledged the existence in Greece of intense emotions, the difficulty of establishing the validity of electoral lists, and the fact that the extreme Left had boycotted the elections. In the opinion of the Mission, however, the full participation by the Left "would not have altered the general outcome."

During April 1946 the *U. S. S. Missouri,* the battleship on whose decks the armistice with Japan had been signed in 1945, visited Greek waters on a "goodwill mission." This mission clearly revealed the determination of the United States to participate in eastern Mediterranean affairs and to warn the Soviet Union that the United States would oppose any efforts on the part of Russia to gain control of the Dardanelles. (See Dardanelles.)

On Sept. 1, 1946, a plebiscite on the return of King George II was held in Greece, and the pro-monarchist forces won approximately 72 per cent of the ballots cast. Since no Inter-Allied Mission had been responsible for the observation of this election, the United States made no formal statement on the conduct of the plebiscite.

The United States viewed with concern the repeated incidents which took place during the year along the northern frontiers of Greece and between "rebels" and Greek government forces throughout the country. Accordingly, the American representative on the Security Council proposed that the United Nations hold an inquiry into the causes of these disturbances. The Soviet Union, which had previously questioned the presence of British troops in Greece, opposed this proposal, unless Bulgaria and Albania, which were not members of the United Nations, were invited to participate in the investigation. When a majority of the Security Council refused to include Bulgaria and Albania on the commission of inquiry, Russia finally agreed to the naming of an investigatory body consisting of representatives of each of the 11 nations belonging to the 1947 Security Council, provided Bulgaria and Albania would be permitted to make declarations to the commission. At the end of December this commission, which was the first United Nations body instructed to carry out an investigation on the spot for the Security Council, was named. Mark Ethridge, publisher of the Louisville (Kentucky) *Courier Journal,* represented the United States on the commission.

DARDANELLES

On the issue of the control of the Dardanelles, the United States took the lead in opposing the Soviet concept that the Straits were of interest only to the Black Sea powers, and hence the proper subject of virtual Russian control. In a firm note to Moscow Oct. 9, 1946, the United States insisted that "the regime of the Straits is a matter of concern not only to the Black Sea powers but also to the other powers, including the United States." Washington accordingly declared that the United States did not consider that the agreement reached at the Potsdam Conference of the Big Three in August 1945 for the revision of the Montreux Convention prejudiced the participation of the United States and Britain in a new Straits regime. In a concluding paragraph which clearly revealed the determination of the United States to prevent Russian control of the Dardanelles, the American note declared: "My Government also feels that it would be lacking in frankness if it should fail to point out again at this time . . . that in its opinion the Government of Turkey should continue to be primarily responsible for the defense of the Straits and that, should the Straits become the object of attack or threat of attack by an aggressor, the resulting situation would be a matter for action on the part of the Security Council of the United Nations." Britain, as a Mediterranean power and an ally of Turkey, also supported the view that the control of the Straits was of concern to nations other than those adjoining the Black Sea, and it joined the United States in protesting the Soviet attitude. By the end of the year, however, no arrangements had been made for calling an international conference instructed to revise the Straits Convention.

GERMANY

In Germany, the problems of accommodating the political, ideological, and economic interests of Russia and the Western powers were even more difficult than they were in eastern Europe. The continued division of Germany into occupational zones reflected the inability of the Allies to agree on the future of this still powerful country of 142,000 square miles and an estimated population of 59,500.000 in the heart of Europe.

The most important inter-Allied debate on Germany took place during the final meetings in Paris of the third session of the Council of Foreign Ministers, which had been discussing the treaties with the former Axis satellites. The Foreign Ministers' discussion indicated that all three major powers agreed that it was neither desirable nor practical to strip Germany of productive capacity and reduce it to an agrarian state. As Foreign Minister Molotov declared on July 10, "such a course would result in undermining the economy of Europe, in the dislocation of world economy, and in a chronic political crisis in Germany that would spell a threat to peace and tranquility." This pronouncement by the Soviet representative bore a close resemblance to numerous British and American statements on Germany's economic needs. Moreover, the Russian suggestion that the "level of industry proposal" for Germany, announced by the Allies on March 28 and designed to reduce Germany industry to half its pre-war production by 1949, might have to be revised upward, met with the approval of the Western powers.

Despite this show of Allied agreement that German economic revival was essential to the self-sufficiency of the occupied country itself and the reconstruction of Europe as a whole, the Western powers and Russia favored the economic recovery of Germany for such different reasons that their unanimity on the diplomatic level had no practical effects on administrative practices. To the British and Americans, whose zones were deficient in essential food production, it was important that the Germans in the western areas be permitted to become industrially active and exchange their local production for food, raw materials, and essential consumer goods which might be available either in the Russian zone or abroad, in order to become self-supporting. The United States found that the food and other forms of relief it was obliged to send to its occupied zone in order to maintain the Germans at a bare subsistence level cost approximately $200,000,000 per year, and Britain found that its annual financial burden in Germany amounted to approximately $320,000,000. The Russians, on the other hand, held that the economic revival of Germany, and particularly the heavily industrialized Ruhr, was desirable because the Soviet Union needed virtually unlimited quantities of German manufactured goods and wished to secure these goods free as reparations.

Where the Western powers and Russia differed most sharply, however, was on the kind of Germany they wanted to see achieve economic and political unity. The Russians wished to establish in Germany a regime composed of "friendly" elements—a Communist-dominated coalition. The Western powers, on the other hand, favored a "democratic" Germany, and they hoped that, by improving economic conditions in Germany, they might avert the spread of Communist influence in Germany.

Having failed to achieve Big Three agreement on the immediate establishment of economic unity in Germany, the United States took the initiative in securing whatever degree of unification might be possible in order to improve conditions in Germany.

On July 11, Secretary Byrnes announced that the United States proposed to "join with any other occupying government in Germany for the treatment of our respective zones as an economic unit." Although Britain alone among the other occupying powers accepted this proposal, the United States decided to proceed with this limited unification. Negotiations thereupon took place in Washington during November and December for the economic merger of the British and American zones, and on Jan. 1, 1947, the economic unification of these areas of western Germany was formally announced.

Lest the Germans become convinced that it was only by establishing a strongly centralized Communist regime that they might regain national unity, Secretary Byrnes, in an address delivered at a special meeting of Allied and German officials at Stuttgart Sept. 6, indicated that the United States opposed not only Germany's economic disunity, but its lack of political unity as well. To achieve this unity, Byrnes suggested that a German National Council composed of "democratically responsible" officials should be established as soon as possible. He made it clear, however, that the establishment of this central administrative body must not be permitted to lead to German military resurgence. As a means of preventing this result he repeated the proposal, which he had previously made on April 29, for a 25-year alliance of the Big Four. Although the suggestion met with approval in London, it was coolly received both in Paris and Moscow, and no additional efforts were made during 1946 to implement this proposal.

By expressing disapproval of far-reaching territorial changes in Germany, Secretary Byrnes brought out into the open some of the most delicate questions posed by the German problem. Since the Soviet proposal for "the ultimate transfer to the Soviet Union of the City of Koenigsberg and the area adjacent to it" had been approved in principle at the Big Three Conference at Potsdam in August 1945, Byrnes declared that "we will certainly stand by (this) agreement." However, as far as Poland was concerned, he pointed out that the Potsdam Declaration had stated that "Pending the final determination of Poland's western frontier," certain specified German territories, including the portion of East Prussia not placed under the administration of the USSR and including the former free City of Danzig, "shall be under administration of the Polish State." As Byrnes declared, the phrasing of the Potsdam agreement clearly left the way open for revision of what had been intended as a tentative border settlement. Although, therefore, the United States was willing to support revision of Poland's northern and western frontiers, Byrnes declared that "the extent of the area to be ceded to Poland must be determined when the final settlement is agreed upon." This statement indicated that the United States would regard the question of Poland's western boundary a proper subject of discussion when the Council of Foreign Ministers considered the German peace treaty at their next meeting scheduled to be held in Moscow in March 1947. Since, however, Poland viewed its acquisition of German territory as final, particularly since the Soviet government had promised this territory as compensation for the areas of eastern Poland which Russia annexed at the end of the war, it appeared that the United States might find its attitude toward the German territorial settlement seriously challenged.

NUREMBERG TRIBUNAL'S JUDGMENT

In a document of 50,000 words the Nuremberg International Military Tribunal passed judgment Oct. 1, 1946 on the major Nazi leaders who had gone on trial before the court nearly a year before.

The penalty of death by hanging (carried out Oct. 16) was decreed for 12 of the defendants. Those condemned were Hermann Goering (who committed suicide in his cell a few hours before the executions, thus fulfilling his boast that the Allies would never succeed in hanging him), Joachim von Ribbentrop, Field Marshal Gen. Wilhelm Keitel, Ernst Kaltenbrunner, Dr. Alfred Rosenberg, Hans Frank, Wilhelm Frick, Julius Streicher, Fritz Sauckel, Col. Gen. Alfred Jodl and Arthur Seyss-Inquart. Martin Bormann, who succeeded Rudolf Hess as Deputy Fuehrer and who was tried in absentia owing to the lack of conclusive evidence of his death, also was sentenced to death by hanging if he should ever be apprehended.

Three others—Dr. Hjalmar Schacht, Franz von Papen and Dr. Hans Fritzsche—were acquitted by the Tribunal over the dissent of the Soviet Member of the court.

Life imprisonment was meted out to Hess, Walther Funk, and Grand Admiral Erich Raeder. The Soviet judge likewise dissented from his colleagues' judgment on Hess, expressing the opinion that he had merited death. Baldur von Schirach and Albert Speer each received 20-year terms. Baron Constantin von Neurath received the comparative mild sentence of 15 years imprisonment. The lightest punishment of all fell to Grand Admiral Karl Doenitz, who was given a term of ten years in prison.

Concerning the lesser German war leaders who had not been tried by the Nuremberg Tribunal, Justice Robert H. Jackson, chief United States counsel for the prosecution at Nuremberg, declared in a report to President Truman that "there are many industrialists, politicians, diplomats, and police officials whose guilt does not differ from those who have been convicted except that their parts were at lower levels and have been conspicuous." He recommended that each occupying power try these cases within its own zone. Within the American zone alone there were approximately 80,000 accused Nazi leaders in prison camps awaiting trials. Since the Nuremberg Tribunal held, in a decision from which the Russian judge dissented, that entire Nazi or German groups could not be condemned, individual members of organizations, such as the Elite Guard, the Storm Troopers, and the General Staff, must be tried separately.

PRECEDENTS SET BY THE TRIBUNAL

The Nuremberg Tribunal, which had been established by an agreement of Aug. 8, 1945, among the governments of 23 Allied nations, had been invested by its Charter with power to try and punish persons who had committed crimes against peace, war crimes and crimes against humanity. In exercising these powers, the Tribunal laid down at least two major precedents, perhaps the most far-reaching being that individuals might be held personally responsible for the actions of the state they represent. Precedents were adduced to show that, even though the subjects of international law are not individuals but states, individuals have been regularly held criminally accountable for breaches of this law. Accordingly, the argument that responsibility for a sovereign act of a State can not be placed upon the Ministers who ordered the action was overruled.

The court laid down a second precedent of importance when it decided that the levying of aggressive war is a crime. This ruling rested upon a succession of treaties and agreements, to which Germany was a party, and which culminated in the Kellogg-Briand Pact of 1928 outlawing war as an instrument of national policy. On the basis of this ruling, the court held that the subversion under threat of war of the independence of Austria and Czechoslovakia, as well as the armed invasion of a long list of countries from Poland in 1939 to the Soviet Union in 1941, were criminal acts of the Nazi State.

OBJECTIONS BY SENATOR TAFT

Senator Robert A. Taft of Ohio, a Republican leader frequently mentioned as a possible presidential candidate, was the only prominent American leader who publicly took issue with the precedents laid down by the Nuremberg court. In a speech at Kenyon College on Oct. 5, Senator Taft charged that the verdict at Nuremberg represented a miscarriage of justice which the American people would long regret. The Nuremberg Tribunal, he declared, had violated "that fundamental principle of American law that a man can not be tried under an *ex post facto statute*." He stated, moreover, that no trial of the vanquished by the victors could be impartial no matter how it was hedged about by the forms of justice. "In these trials," he charged, "we have accepted the Russian idea of the purpose of trials, Government policy and not justice, having little relation to our Anglo-Saxon heritage."

DOCUMENTARY EVIDENCE PRESENTED AT NUREMBERG

In addition to passing judgment on the major Nazi leaders and setting precedents of international law, the Nuremberg court brought to light many important facts about Germany's war plans, for much of the evidence presented to the Tribunal consisted of German documents captured by the Allied armies. Some of the most important revelations made during the course of the trials were the following:

Czechoslovakia. — Documents reviewed at the trials revealed that on April 21, 1938, Hitler and Keitel fully considered preparations for an attack on Czechoslovakia by means of "Operation Green." On May 28, 1938, Hitler ordered that preparations should be made for military action against Czechoslovakia by Oct. 2, and from that date onward the plan to invade Czechoslovakia was constantly under review. On Aug. 31, 1938, Hitler approved a memorandum by Jodl concerning the timing of the order for the invasion of Czechoslovakia. The documents also revealed that, shortly after the conclusion of the Munich Pact which provided for the annexation of the Sudetenland to the Reich as the Basis for a Czechoslovak-German settlement, Hitler had no intention of adhering to this agreement and instead gave orders for the "liquidation of the remainder of Czechoslovakia."

Poland.—On May 23, 1939, Hitler announced at a military conference his decision to attack Poland by "Operation White," and he indicated that he was fully aware that the attack would probably lead to war with France and Britain. He declared, however, that this was a risk he was willing to take.

Belgium, Holland and Luxembourg.—The captured German documents also revealed that the plan to seize Belgium and The Netherlands was considered in August 1938, when the attack on Czechoslovakia was being formulated and the possibility of war with France and Britain was contemplated. In May 1939, when Hitler decided to attack Poland and realized that war with England and France was not only possible but practicable, he declared that "Dutch and Belgian air bases must be occupied . . . Declarations of neutrality must be ignored."

USSR — Evidence presented at the Tribunal indicated that the USSR had "unmistakably" conformed to the terms of the Soviet-German non-aggression pact of Aug. 23, 1939. The German government itself had been assured of this fact by the highest Russian sources. Nevertheless, as early as the late summer of 1940 Germany began to make preparations for "Operation Barbarossa" against the USSR, and the plans were finally completed at the beginning of November 1940, and on Dec. 18, 1940 Hitler issued directives calling for completion of all preparations connected with the Operation. Immediately after the invasion, Rosenberg, following conferences with Keitel, Jodl, Raeder, Funk, Goering, Ribbentrop, and Frick, worked out a plan for the future political and economic organization of the occupied Soviet Territories. These plans outlined the destruction of the Soviet Union as an independent state, and its partition, the creation of so-called Reich Commissariats, and the conversion of Estonia, Latvia, Byelorussia, and other territories into German colonies.

United States.—From the conclusion of the Tripartite Pact on Sept.

27, 1940, German leaders encouraged the Japanese to attack Singapore and other British possessions in the Far East and assured them that, if such an attack led to war with the United States, Germany would "strike without delay." Ten days before Pearl Harbor, Ribbentrop told the Japanese Ambassador in Berlin that if Japan attacked the United States, Germany would at once join in war against the United States. Accordingly, four days after the Japanese attack on the American fleet in Pearl Harbor, Germany declared war on the United States.

U. S. LENDING POLICY—RUSSIA

The question of whether the United States should extend loans on a purely commercial basis or should use its financial power to implement the broad political and economic objectives of this country was the subject of important public and private debates during 1946.

In the case of Russia the debate was particularly heated. Under the leadership of Henry A. Wallace, prior to his resignation from the Cabinet on Sept. 20 (see Wallace Controversy), the Department of Commerce maintained that the United States should grant the USSR a loan on a strictly commercial basis and should not use its economic power for the purpose of inducing Russia to modify its restrictive trade arrangements in eastern Europe. In a letter to President Truman on July 23, setting forth his views on foreign policy, Wallace declared that "the question of a loan (to Russia) should be approached on economic and commercial grounds," since in this way the United States would be able to demonstrate that it is "not attempting to use its economic resources in the game of power politics."

The State Department, on the other hand, which drafted the correspondence Washington carried on with Moscow concerning a possible $6,000,000,000 American loan to Russia, insisted that the credits should be granted only after a satisfactory arrangement had been reached regarding Soviet trading practices, such as bilateral trade agreements, which ran counter to American foreign economic policy. Despite continued unofficial indications from Russia that the Kremlin would welcome a loan from the United States, Moscow had sent no reply by the end of 1946 to Washington's last note, dated June 13, on this subject. In Washington, Moscow's silence was interpreted as meaning that the Soviet Union was unwilling to grant the United States larger trading opportunities in eastern Europe, at least at a moment when the Russians were deeply conscious of their inability to compete with American exports.

LOAN TO GREAT BRITAIN

The credit of $3,750,000,000, which the United States advanced to Britain in 1946, constituted the largest and most important loan which this country made during the year. After months of negotiation, a tentative agreement between the United Kingdom and the United States had been reached Dec. 7, 1945, and on Jan. 30, 1946, President Truman requested Congress to approve this arrangement. On May 10, the Senate agreed to the proposal by a vote of 46 to 34, and on July 13 the House adopted the measure by a vote of 219 to 155.

The loan to Britain was originally designed as the major item on Washington's post-war program for reestablishing multilateral world trade. To this end Britain agreed that, if it received the American credits, it would consider reduction of its imperial preferences and relax exchange controls over the sterling area. Before the loan agreement was finally passed by Congress, however, it had taken on political implications. For the belief that Britain, if it received American financial aid, would be in a stronger position to counterbalance Russia's economic and political power, played an important part in securing Congressional approval for the loan.

EXPORT-IMPORT BANK LOANS

During 1946 the United States Export-Import Bank, which had been established by Congress in 1945, continued to be the major source of American loans to liberated and war-devastated countries. The European nations which secured credits from the Bank during 1946 were the following:

Czechoslovakia.—In May 1946, a $20,000,000 credit for the purchase of American cotton was extended to Czechoslovakia, and in October an additional credit of $2,000,000 for the purchase of tobacco was authorized. However, approximately $40,000,000 of a $50,000,000 credit for the purchase of U. S. Army surplus goods in Europe was cancelled in September, and negotiations for an additional $50,000,000 loan from the Bank were suspended (see Czechoslovakia).

Finland.—A $35,000,000 credit from the Export-Import Bank was extended to Finland in January 1946 for the purchase of American supplies, materials, equipment, and services. This credit was in addition to an allocation during 1945 of $5,000,000 to Finland for the purchase of American cotton.

France.—In May 1946, France received a credit of $650,000,000, one of the largest loans made by the Export-Import Bank, for the purchase of American equipment and materials required for the reconstruction and modernization of French industry Since Leon Blum, veteran leader of the French Socialist party, represented France during the loan negotiations in Washington, the loan assumed political significance and was widely interpreted as an effort on the part of the United States to encourage moderate political groups in France. This $650,000,000 credit was in addition to that for $550,000,000 authorized by the Bank in 1945.

Greece.—The Bank approved a credit of $25,000,000 to Greece in January 1946 to finance the purchase of American materials required for the restoration of productive facilities in Greece.

Italy.—During 1946, the only credit the United States extended to Italy was a cotton credit of $25,000,000.

The Netherlands.—A credit of $200,000,000 to The Netherlands was approved by the Bank in April 1946. This credit was in addition to the two loans, totaling $100,000,000, extended by the Bank during 1945. The 1946 credit was notable because private capital participated in the loan to the extent of approximately 50 per cent, thus indicating the confidence of American investors in the financial soundness of the Netherlands.

Turkey.—Turkey received a $25,000,000 credit in September 1946.

Poland.—The Bank approved a credit of $40,000,000 to Poland in April 1946 for the purchase in the United States of locomotives and coal cars for the Polish State Railways. The economic purpose of the credit was not only to assist in the rehabilitation of Poland but to provide the means of transporting Polish coal to other European countries where coal was a prime requirement for reconstruction.

OCCUPIED JAPAN

By PAUL M. A. LINEBARGER

PROFESSOR, SCHOOL OF ADVANCED INTERNATIONAL STUDIES

GENERAL

Throughout 1946, Japan remained under occupation by the Allied powers. The United States continued to be the power chiefly responsible for both military occupation and political tutelage. The year was marked by an uneventfulness almost unprecedented in the history of military government; General of the Army Douglas MacArthur was in immediate charge of both military and administrative phases of the occupation. With the title, Supreme Commander for the Allied Powers, he has the Japanese emperor, government, and people under his immediate authority. The title, abbreviated to

SCAP, is widely used to indicate not merely the general himself but his organization as well.

Hirohito, Emperor of the Age of Showa, has retained his throne despite previous wartime incumbency. He lost his previously alleged Shintoist divinity through voluntary disavowal early in the year; later in the year he lost his constitutional position as the source of Japanese sovereignty. He continues to reign as monarch, subject to the unqualified authority of the Allied powers through SCAP.

Economically and politically Japan has benefited under the American occupation. Her condition is in striking contrast to that of the surrounding countries. Since no general political settlement has been achieved or even sought in the Far East by the Big Four powers, acting together, China has remained in turmoil despite General George C. Marshall's prolonged mediation between Nationalists (Kuomintang) and Communists (Kungchantang). In Korea, divided between United States and Soviet commanders at 38° N. latitude, the country has been separated by a virtual blockade line along the inter-zone frontier. In Indonesia, the Philippines, Indochina, and (to a lesser extent) Malaya and Burma, wartime turbulence continued into 1946. Only Siam and Japan were quiet, orderly, and unified. Japan under MacArthur has been spared civil war, famine, and pestilence; the only major disasters were storms and an earthquake.

AUTHORITY OF SCAP

American policy toward occupied Japan was defined by a document entitled, "United States Initial Post-Surrender Policy for Japan," jointly prepared by the State, War, and Navy Departments and approved by the President, Sept. 6, 1945. This basic charter for SCAP applied throughout 1946. In essence, it declares that the United States desires to cooperate with the other Allies in the occupation of Japan, but that the United States assumes primary responsibility, and if the powers differ in their views of the occupation, "the policies of the United States will govern."

SCAP was installed as superior to the Japanese government. It was rigorously denied that the act of surrender had a contractual character or that the Allies' authority in Japan was limited except for such self-imposed limitations as they might apply. The Japanese were permitted to use their own government for purposes of administration; this was not a political right conceded to them but merely a convenience established by the Allies themselves.

The basic policy provided also for disarmament and demilitarization of the Japanese armed forces, trial and punishment of war criminals, removal of dictatorial and tyrannical laws and officials, encouragement of political freedom and responsibility, resumption of peaceful economic activity, and extirpation of militarism and ultra-nationalism from Japanese business, politics, thought, and social life.

These American policies were not initially ratified by the other United Nations. However, the creation of inter-Allied machinery extended a general international acquiescence in the authority and policies of SCAP.

INTER-ALLIED CONTROLS

The United States desired to avoid the appearance of unilateral action; it was at the same time necessary to avoid impeding occupation, since a slip in initial arrangements might have led to misunderstanding, catastrophe, or massacre. The United States pressed merely for a Far East Advisory Commission in the autumn of 1945. This functioned without USSR participation and was therefore unsatisfactory.

In December, 1945, the Moscow meeting of the Council of Foreign Ministers arrived at a working solution. A Far Eastern Commission was established. With members representing 11 of the governments which participated in war against Japan, it was designed to meet in Washington. Excluded from the scope of its authority were military problems and territorial adjustments. *De jure* policy-making, the Commission was in fact consultative. General MacArthur's authority over communications with Japan made it highly improbable that the Commission's investigators could operate in the field. The Commission itself visited Japan at the time of its transformation from FEAC to FEC.

Throughout 1946, the Commission met in the former Imperial Japanese Embassy in Washington, D. C. It was staffed by distinguished American and Allied experts, among them Sir George Sansom, the outstanding British authority on Japan. Any member might call for the review of any topic. Topics discussed with considerable effect were the elections, the political tone of the occupation, and the constitution.

Allied policy decisions concerning Japan move, therefore, through the following five steps: (1) the Far Eastern Commission may review or initiate policy which is communicated through (2) the United States Government to (3) the Supreme Commander for the Allied Powers, who may or may not consult with (4) the Allied Council for Japan, before relaying the policy to (5) the Imperial Japanese Government to be put into effect.

The Allied Council for Japan is a four-power body meeting in Japan. Its function has been overtly consultative. British, Dominion, Chinese, and Soviet comment have been offered frequently to General MacArthur. The Council has not had a broad scope of formal authority like that delegated to the Commission by participating governments.

MILITARY GOVERNMENT

Within Japan, General MacArthur maintained his HQ SCAP throughout the year. Communications from the United States Government are received through War Department or State Department facilities. Work on policy or supervision within the Headquarters is performed by nine staff sections: Economic and Scientific, Civil Information and Education, Natural Resources, Government (for supervision of the Japanese administration), Legal, Civil Intelligence, Public Health and Welfare, Civil Communications, and Statistical and Reports. In addition to these, General MacArthur has the nucleus of a normal military staff. Attached to his headquarters is the International Military Tribunal for the Far East; directly under him is the United States section of the prosecution staff, along with prosecutors from the other Allies, the International Prosecution Section.

The chief political adviser to SCAP is George Atcheson, an American career diplomat with long residence in the Far East, affable manners, and a capacity to speak forthrightly when aroused.

Underneath GHQ SCAP, the military government functions through the military commands of the occupying forces, chiefly the American Eighth Army. When action is needed at the provincial, prefectural, or local level, the appropriate command is transmitted to the Allied military officer on the spot. However, most activities are carried on by action of the Japanese government in Tokyo using its own facilities to instruct local and subordinate Japanese agencies.

PROCEDURE IN TRANSMITTING COMMANDS

The Japanese established a Central Liaison Office in 1945 for the express purpose of accepting commands from the Allies and routing them to the appropriate portion of the Japanese government for action. Normally, Allied commands go from this CLO to the appropriate ministry of the Japanese government, although occasional commands may need action by the Emperor, the Diet, or other agencies.

There has been no single instance of a direct Japanese refusal to obey an Allied command. There have been occasional protests from the Japanese, and occasional complaints from SCAP that specific directives, previously given, were not properly fulfilled. None of these led to a crisis.

THE POST-SURRENDER GOVERNMENT

Immediately following surrender, the Japanese were commanded to abolish all militaristic portions of the Japanese government, such as the High Command (Imperial Headquarters), Board of Marshals and Fleet Admirals, War Ministry, Navy Ministry, Office of the Lord Keeper of the Privy Seal, secret and special police. reservists and underground military organizations, and wartime economic controls.

The War Ministry was transformed into a First Demobilization Ministry; the Navy Ministry, into a Second Demobilization Ministry. In June, 1946. these were further reduced to Boards. They had the task of discharging repatriated Japanese military and civil personnel, and of mustering out the Japanese armed forces into civilian life in an orderly, recorded, official manner.

The Japanese government, during 1946, operated under the pre-war 1889 (Meiji) constitution, and in a juristic sense was the same government which had made war against this country. However, the constitutional and political changes prepared during 1946 led the way to drastic, thoroughgoing structural reforms in 1947. Even with the old machinery of state, the Japanese complied readily with Allied control.

THE EMPEROR

Though Hirohito ruled, his own proclamations changed the nature of his role. In two historic documents. the Japanese monarchy was transformed into a defined office with determinable political status.

On Jan. 1, 1946, Hirohito issued a rescript which reminded his people of the progress toward modernization and constitutionalization in the nineteenth century under his grandfather and then flatly disavowed his divine status: "We stand by the people and We wish always to share with them in their moment of joys and sorrows. The ties between Us and Our people have always stood upon mutual trust and affection. They do not depend upon mere legends and myths. They are not predicated on the false conception that the Emperor is divine and that the Japanese people are superior to other races and fated to rule the world."

The new constitution (see p. 111) provided that the Japanese Emperor should be recognized only as receiving his authority from the sovereign will of the Japanese people, added that the Emperor should act in political matters only with the advice and approval of the Cabinet, and that he should exercise no power not specifically assigned to him under the new provisions.

In his personal conduct, Hirohito complied with the spirit of the times. Instead of remaining aloof like an Asiatic god, he visited his people in their homes and on the street, traveling simply and unostentatiously. It was widely believed by Allied observers that Hirohito himself enjoyed the greater freedom which this new status gave him. An American woman (Mrs. Elizabeth Gray Vining) was taken into the Imperial Household to tutor the Crown Prince.

Retention of the Emperor has been wholly voluntary on the part of the Japanese people. The United States declaration of initial post-surrender policy made it plain that the Emperorship was to be abolished or reformed as the Japanese people might choose. Except for the Communists, the Japanese have almost unanimously chosen to retain the Throne while curtailing its "divinity" and privileges.

THE JAPANESE CABINET

Japan had only two prime ministers during 1946. The first post-surrender premier, Baron Kijuro Shidehara, continued in office until May 20th, when he resigned, to be succeeded by Shigeru Yoshida, another old-line official who had succeeded in avoiding the Allied purge lists. The election which led to this shift in premiers and reshuffle of the cabinets was held April 10. The delay was owing to the uncertainty of the official character of the Shidehara administration: was it a caretaker government designed to remain in office until a new constitution came into effect, or merely one more cabinet subject to fluctuations in popular opinion as reflected by the vote? The latter alternative was decided upon after Japanese political leaders protested against Shidehara's interpretation of his own role.

Parliamentary traditionalism in Japan thus proved to be stronger than Allied observers had dared to hope. In the technical sense of having monolithic authoritarian parties resting on fanatical dogma and asserting their authority above that of the state itself, Japan never did become fascist, even during the war. It had become a reactionary, semi-fascist, repressive constitutional monarchy. Hence the Japanese parties, though they failed to survive the war under their own names (except the Communist Party based in Red China), left a legacy which survived the partial, ill-meant but ineffective repressions of Tojo. Koiso, and the other wartime premiers. The cabinets of 1946 behaved much like their predecessors. Japan continued to change premiers more often than England but less frequently than France.

JAPANESE PARTY POLITICS

In the first post-war elections held in Japan, the people on April 10 elected a new Diet. It had been six years since the last previous use of political parties in a national election. All the pre-war parties had been legally consolidated in 1940 into the Imperial Rule Assistance Association, superseded in 1942 by the Imperial Rule Assistance Political Society. This was abolished in 1945 upon surrender.

The new elections were criticized by Soviet and Leftist commentators because it was alleged that the post-war parties were mere fronts for the wartime cliques which had existed within the "unified" wartime party. General MacArthur and the United States Government took the view. however, that the Japanese had to learn freedom by using it practically and that nothing was to be gained by keeping an unrepresentative group in control and ruling solely through Imperial edict. In a sharply worded reply to the Far Eastern Commission (March 29), General MacArthur pointed out that further delay would not necessarily liberalize the election.

The results of the election and behavior of the Diet appear to have justified General MacArthur's position. The five major parties emerged as follows in terms of parliamentary seats: Liberals, 141; Social Democrats, 93; Progressives, 92; Cooperatives, 16; and Communists, 2. There was also a large number of splinter parties, some of which had higher representation than the Communists, but who could not compare with the Communists in popular influence, party discipline, and rigorous fanaticism.

The Liberals and Progressives represented the conservative elements. The Social Democrats, weakened somewhat by schism, held the middle Left. The Communists appealed to the extreme Left. The extreme Right was suppressed by order of General MacArthur. For the first time, a Women's Party took part in an election.

For the remainder of 1946, most observers believed a swing to the left to be taking place. In the absence of national elections this was difficult to demonstrate. The Communists remained both vociferous and effective.

THE NEW CONSTITUTION

SCAP and the Japanese political leaders both frankly confessed that 1946 was merely a transition period. Hopes for real political democratization were pinned upon the new constitution. The meeting of the Diet concerned with the constitution was the longest such session in Japanese history (June 20-Oct. 12).

Progress toward the new constitution was started on Oct. 11, 1945, when SCAP indicated to the Japanese government the Allied expectation that fulfilment of the Potsdam terms would involve a "liberalization of the constitution." The Emperor ordered establishment of a Constitutional Problem Investigation Committee. A

Japanese government draft appeared on March 6, 1945 and was generally approved by all sectors of Japanese public opinion except the Communists. This draft included five main points, which were retained throughout further drafts and are in the new constitution as it now stands: 1. Redefinition of the powers of the Emperor; 2. Renunciation of war; 3. Provision of a bill of rights; 4. Abolition of the former House of Peers and its replacement by a House of Councillors; and 5. Reform of the judicial structure.

Eight months were required for the detailed discussion of the points of the new constitution. Additional safeguards were installed. A few matter-of-fact commentators objected that no new constitution was needed, since the spirit and not the letter of the law created democracy, and, if properly interpreted, the 1889 constitution, still in effect, could be construed to be democratic. The Communists continued to object to the timing, content, and intent of the new constitution.

The final draft was approved by solemn procedure and was proclaimed by the Emperor Nov. 3, 1946. It is to go into effect April 3, 1947.

NEW CONSTITUTIONAL GOVERNMENT

The new constitutional government will retain the Emperor but with strictly limited powers. He will continue to have a minor utility, as does the British king, in appointing incoming prime ministers, but most of his governmental and all his Shintoist functions are taken from him. Sovereignty is explicitly declared to rest in the people, not in the Emperor.

The bill of rights guarantees the Japanese everything which the 1889 constitution assured to the people. The most important provision is equal rights for women. The usual well-meant but vague provisions concerning freedom of property, collective bargaining, freedom of occupation, etc., so common in twentieth-century constitutions, are also included, giving the document a mild Socialist tinge.

The House of Councillors emerges with considerable resemblance to State Senates in the United States. The House of Representatives is made more flexibly parliamentary and is given undisputed primacy in the government.

The principle of Cabinet responsibility is adapted squarely from the British model. Both the premier and the cabinet ministers must be selected from among members of the lower House.

The judiciary is given the power of review on constitutional grounds, a provision which will be somewhat unrelated to the general tradition and background of Japanese administrative law.

Criticism of the constitution involved the point that the document sounded as though it had been translated from English, and bore little resemblance to the kind of institution on which the Japanese themselves would rely. Defense of the document involved reference to its ready amendment and to the fact that China and the USSR both possessed elaborate democratic constitutions and nevertheless appeared able to operate their governments in manners peculiar to themselves.

RENUNCIATION OF WAR

The most striking provision of the new constitution is its renunciation of war. Article IX is the first enactment of its kind by a modern sovereign state, declaring:

"War, as a sovereign right of the nation and the threat or use of force, is forever renounced as a means of settling disputes with other nations. The maintenance of land, sea and air forces, as well as other war potential, will never be authorized. The right of belligerency of the state will not be recognized."

Critics, including the celebrated liberal constitutional jurist Dr. Minobe, were quick to point out that the provision seemed as noble as it was impractical and that even Japan had a right to exist.

DEMOCRATIZATION

Apart from disarmament, demilitarization, and governmental reform, democracy in Japan was sought through the elimination of propaganda, opening up of free news facilities, promotion of education, liquidation of reactionary cartels and combines, encouragement of labor unionism, and land reform. American policy generally took into account the fact that, if Japan were to become truly democratic, the change would have to occur from within the Japanese mind.

Among the United Nations, debates concerning Japanese democratization chiefly involved the degree of depth to be reached. The Communists and other Left-liberals urged that social and economic reform of a thoroughgoing order had to underlie political and educational reform; conservatives and self-styled realists advocated the remedy of Japan's worst social abuses, but held that social revolution would lead only to totalitarianism of the Left replacing totalitarianism of the Right.

TRIALS AND PURGES

To remove the malign influence of Rightist extremism, the Allied powers placed the major Japanese militarists on trial before the International Military Tribunal for the Far East. The latter part of 1946 was concerned with the trial. Local trials in southeast Asia and elsewhere had meanwhile disposed of cases having only regional interest; in Manila, two Japanese generals, Yamashita and Homma, were put to death.

Within Japan, SCAP has issued repeated directives designed to purge from positions of honor, trust, influence, or profit all Japanese who led the militarist drive for war. Business, publications, schools, government, and the professions are alike to be closed to ultra-militarist and nationalist elements. Concurrently, positive steps are being taken to build up free institutions, including the press.

NEWSPAPERS

Three newspapers now practically blanket Japan. *Asahi,* with a 3,200,000 circulation in three cities, supported the Democratic Front (union of Social democratic Left and the Communists). *Yomiuri Hochi,* formerly the house organ of militarism, is now sympathetic to the Communists; its November (1946) circulation was 1,800,000. The *Mainichi* pursued its traditional middle course and retained a 3,000,000 circulation in Osaka and Tokyo. The leading Japanese newspaper is *Akahata,* 300,000 circulation, which appears every three days. The official Domei news agency and the government propaganda monopoly of radio were both dissolved and were replaced by facilities having a more normal commercial basis.

EDUCATION

At the invitation of General MacArthur, an Education Mission arrived in Japan in March. Its report recommended decentralization of educational administration, introduction of parent-teacher associations, extension courses, and free libraries. It also recommended relinquishment of the traditional Chinese ideographic script.

The report supplemented the routine educational reform which had been supervised by SCAP. A continuous process of screening teacher staffs to eliminate militarist, fascist, or other Rightist elements continued. The use of geography, morals, and Japanese history textbooks was suspended until suitable material could be printed. SCAP helped the Japanese to get the new democratic texts out punctually. All restrictions on the use of library books were removed.

The textbook program was generally approved by observers, but the teacher purges were considered inadequate. By Sept. 30, 1946, only 107 teachers out of the 200,000 examined had been removed.

ZAIBATSU

Zaibatsu ("wealth-clique") is the Japanese term applied to the class of monopolist entrepreneurs who led Japan from feudalism to modern industrialism and thence to war and to destruction. All shades of Allied opinion desired removal of the great Japanese cartels, such as the family-trusts of Mitsui and Mitsubishi; administrative and policy difficulties arose when the question came up of how far capitalism itself was to be broken down or fragmented.

Official American policy was directed against the Zaibatsu in terms of ownership combines, not as private individuals. The Japanese capitalists, realizing that their trusts were to be broken up, submitted a voluntary plan for liquidation to the Japanese government. The Yasuda group presented the plan not only on its own behalf but spoke for Mitsui, Sumitomo, and Mitsubishi as well. A Mission on Zaibatsu was sent out to Japan by the War Department. It reported to SCAP in March. Various specific financial procedures were recommended to supplement the Yasuda report, which proposed in essence that holding company shares be taken over by the government and paid for through the use of blocked bonds. Since even bank accounts have been limited to scheduled withdrawals, this provided a basic check.

On April 20, 1946, the Japanese government promulgated a Holding Company Liquidation Commission ordinance, providing standards for liquidation of the combines; on Sept. 30, the Commission took over the affairs of Mitsui, Mitsubishi, and Yasuda. The list of examined and scheduled companies grew throughout the year. It was anticipated that such companies would be reconstituted through sale of shares for suitable operating units to be public.

LABOR UNIONS

To balance up the other end of the economic scale, Allied policy, through SCAP, undertook the encouragement of labor unions in Japan. The imitation-totalitarian Labor Front (Sangyo-hokoku-kai) of 1940 was dissolved. Wartime ordinances providing for illimitable mobilization and for a forced "Volunteer Corps" were also cancelled.

The Japanese are credited by historians with a talent for combination. They showed this throughout 1946 in the constant multiplication of labor organizations, in the brisk activity shown by workers in fighting for higher wages, and in the novelty of the devices employed by labor in strikes. One of these was "production control." When a given mine or factory went on strike, the workers, instead of stopping production, undertook the management of the plant and sought to break all previous production records as a means of making the management "lose face" while retaining public opinion in favor of the strikers. Since this in effect separated capital from ownership, even though initially on a temporary basis, it amounted to grass-roots socialism. It was informally prohibited by an expression of SCAP disapproval on June 10, but the Japanese Diet evaded the responsibility of legislating against it and left to the first new constitutional Diet of 1947 the responsibility of framing a precise legal code for the definition of strikes.

Organizationally, the most important confederation of Japanese labor unions is the Japanese Congress of Industrial Organizations which in October had an estimated membership of 1,600,000. Closely connected with the Communist Party and controlling only a small minority of Japanese labor, it held the great Hokkaido coal strike. Its future appeared uncertain.

LAND REFORM

Feudalism, as a legal institution, had been abolished by Japan in the 19th century. A majority of the farmers remained closely bound to the land by indebtedness or by outright tenancy. One of the forces behind Japanese militarism before Pearl Harbor was the appeal which the Army had for impoverished farmers. Their discontent made them listen to fascist-type promises of prosperity. Accordingly, farm maladjustment has been not merely an economic problem but a political one as well.

SCAP and the Japanese government undertook elaborate negotiations on the subject during the winter and spring of 1945-1946. The Japanese proposals seeming insufficient, SCAP asked the advice of the Allied Council. The Soviet member recommended confiscation of all landholdings above a certain size, without remuneration. SCAP held that this violated due process of law and was therefore undemocratic.

In September, the Japanese Diet finally passed a land reform act of the type desired by the Allies with the exception of the Russians. The law provided for public assistance to farmers in making land purchases, limited the size of holdings, cut down absentee ownership, and established local boards in each community to proceed with the practical business of underwriting purchase of land by specific Japanese families.

GENERAL ECONOMIC CONDITIONS

For a country which has been bombed, burned, blasted with atomic bombs, defeated, surrendered, and occupied, Japan did relatively well. No widespread starvation occurred. Inflation was continuous, though it never reached breakneck speed. A shortage of raw materials prevented part of the existing plant facilities from operating; uncertainty concerning reparations, Japan's post-war trade, the length of the occupation, the financial future, and the price controls kept many additional facilities away from full exploitation. Toward the end of the year, American unofficial observers commented that the Japanese authorities appeared, in many cases, to acquiesce in bad economic conditions because they could then call upon the Allies either to remedy the conditions or to withdraw.

REPARATIONS

Initial Allied directives involved the closing or sequestration of arsenals and other military plants immediately following surrender in 1945. Since Japan was heavily militarized, this involved setting aside extensive facilities for destruction or for removal by reparations. The vast Japanese developments in Manchuria were carried away or wrecked by the Soviet authorities.

Additional Japanese reparations remained a moot question. Interim plans failed to enumerate the factories specifically enough to release the others to free, confident Japanese enterprise, nor were questions of sharing settled between the Allies themselves. General MacArthur, by November, had designated about 1,100 plants for seizure, 660 of which were currently working on orders for the occupation authorities.

At the end of the year, reparations policy was still on the agenda of the Far Eastern Commission in Washington.

DEFENSE AND FOREIGN POLICY

In 1946, Japan had no independent defense facilities and no separate national foreign policies. The questions of Japan's future defense and future diplomacy had not been taken up by any responsible public official.

REPUBLIC OF THE PHILIPPINES

By BERNABE AFRICA

UNDER SECRETARY OF FOREIGN AFFAIRS, REPUBLIC OF THE PHILIPPINES

THE HISTORICAL ASPECT

The similarity in the dates of the proclamation of the independence of the Philippines and of the United States—July 4—will be noted, but the similarity ends there. While the fight for American independence was bloody, that for the Philippines was bloodless. On July 4, 1946, Manuel Roxas, President of the Republic of the Philippines stated: "The President of the United States has proclaimed our independence. The Republic of the Philippines has now come into being, under a constitution providing for a government which enthrones the will of the people and safeguards the rights of men. This historic event has been completed."

They were significant words for they summarized the historical process accompanying the emergence of the first new independent state from the vast colonial regions of southeast Asia. These words could also be taken as a tribute to America's enlightened colonial policy and tutelage.

REHABILITATION AND RECONSTRUCTION

The Philippines to which President Sergio Osmeña returned in September, 1944, was one of ruin and desolation. Dramatic evidences of the tremendous loss of life and property greeted the President's eyes. Historical landmarks and public buildings had been razed to the ground; public projects were irreparably destroyed; the people were homeless, in rags, and hungry. Assisted by the United States Army, President Osmeña's Administration began the back-breaking task of rehabilitation and reconstruction. From March, 1945, when President Osmeña completed the formation of his cabinet, the reestablished Commonwealth Government restored peace and order, faced the delicate issue of collaboration, and tackled the problem of immediate relief of the masses in prostrated areas.

President Sergio Osmeña was at the head of the reestablished Commonwealth Government in Manila from February 27, 1945 to May 28, 1946. He faced two problems. One involved the formulation and execution of policies designed for rehabilitation and reconstruction; the other his candidacy for the presidency against General Manuel Roxas. From January to July 3, 1946, President Osmeña's Administration was subjected to the compelling demands of relief for the people and the necessity of planning a long-range program for their welfare. At the same time, in anticipation of independence, it had to attend to the preliminary work incident to the relations of the Philippines with foreign countries.

REPRESENTATION IN UN GENERAL ASSEMBLY

Philippine Resident Commissioner Carlos P. Romulo was authorized by President Osmeña to represent the Philippine Commonwealth in the first regular session of the United Nations General Assembly held in London, January, 1946. The Philippine membership in the International Civil Aviation Organization was approved by President Osmeña on March 21, 1945.

UNITED STATES COOPERATION

The multiple aspect of the outstanding problems faced by the Osmeña Administration was not unknown to the United States Government. There were several outspoken critics in the Islands and abroad of the methods pursued by the Commonwealth in the handling of such issues as rehabilitation and relief and the collaboration issue. President Truman himself, however, issued a significant announcement on Feb. 15, declaring that his government had adopted a "hands-off" policy in connection with Philippine political affairs.

At the same time, the American Government helped in the training of Filipinos so that they could subsequently be assigned to Philippine diplomatic missions and consular offices. The Office of Foreign Relations gave examinations for Filipino foreign service *pensionados* in accordance with a plan of the U. S. Department of State. The State Department also handled the grant of scholarships to 15 Filipino students who would study in American colleges and universities, pursuing courses along fields that would help in the early adjustment of Philippine economy.

In March, the standard of living in the Philippines was relieved by the arrival of more than 100,000 sacks of rice from the United States. The Emergency Control Administration—later replaced by the Philippine Relief and Rehabilitation Administration—handled the distribution of the rice, in addition to its duties of giving essential commodities to the needy.

LABOR DIFFICULTIES

In the industries, the social consciousness of the masses as in other countries, manifested itself. Faced with the high cost of living and desirous of better treatment, workers in government corporation and private firms, and even dock workers connected with the United States Army, walked out. The months of February and March saw the rise of strikes. The shipping strike in Manila temporarily tied up the unloading of cargo on piers and caused a logjam. Government employees also felt the rise in living costs. President Osmeña responded to the clamor of government workers by releasing 5,000,000 pesos in March as bonuses for them. He also signed the bank bill, setting aside 10.000.000 pesos for the rehabilitation of local banks.

FILIPINO WAR VETERANS

The problem of the Filipino war veterans also came to the fore. Filipino and American high officials worked and are still working for the grant of benefits to the veteran who fought in Bataan and Corregidor, suffered in the jungles and mountain fastnesses during the enemy occupation, and helped the American troops liberate enemy-held areas. United States High Commissioner Paul V. McNutt, speaking at the guerrilla convention in Camp Murphy early in 1946, repeated assurances that the United States Government was going to extend aid to members of the Filipino war veterans. At the end of that month, the Military Police Command was transferred to the Philippine Commonwealth by the United States in anticipation of the grant of Philippine independence.

WAR CRIME EXECUTIONS

As a piece of poetic retribution, General Tomoyuki Yamashita, last commander-in-chief of the Imperial Japanese Forces, was hanged in Laguna province on Feb. 23, 1946, while General Masaharu Homma, first commander-in-chief of the Imperial Japanese Forces, who was directly responsible for the infamous "death march" from Bataan after its fall. was executed in April. These executions came as a direct result of the trials held by the U. S. War Crimes Commission which had been going on for some months in Manila. During the first three months of 1946, the Philippine Government continued mopping up operations against thousands of Japanese stragglers in the wilderness of Luzon. By the year's end, practically all Japanese had been captured and interned.

NATIONAL ELECTIONS

The bitter struggle for presidential power, which has simmered since the Commonwealth Government was reestablished, began with the proclamation of the candidacies of Senators Manuel Roxas for president and Elpidio Quirino for vice-president. Both represented the Liberal faction of the Nacionalista Party. The candidates for the other wing of the same party were President Osmeña and Senator Eulogio Rodriguez.

The results of the national elections held on April 23, 1946 showed that the Filipinos had repudiated President Osmeña. The Roxas-Quirino ticket won the election by more than 200,000 votes, and obtained a majority in both houses of Congress.

PHILIPPINE TRADE ACT

On May 1, President Truman signed the Philippine Trade Act of 1946 and the War Damage Act. The first, sponsored by Representative C. Jasper Bell of Missouri, provided for trade relations between the United States and the Philippines, imposing quotas on Philippine principal exports free of duty for eight years, beginning 1946, and thereafter imposing a graduated 5 per cent duty yearly, beginning in 1955; and allowing Americans the same rights as the Filipinos in the exploitation of natural resources and operation of public utilities; the second, sponsored by

Senator Millard Tydings of Maryland, provided for the compensation of war damage and the restoration and improvement of public property and essential public services in the Philippines.

AMERICAN LOAN

The first week of May saw the proclamation of Manuel A. Roxas as president of the Republic of the Philippines. On May 8, he left by airplane with High Commissioner McNutt for the United States for a conference with President Truman and other key American officials on the problems confronting the Philippine Republic after the grant of independence on July 4. Upon his return in June, he repeated the necessity of a $400,000,000 American loan to the Philippines, which he said was so economically crippled that it could not possibly hope to avert the tide of disaster unless helped financially.

INAUGURAL OF PRESIDENT ROXAS

President Roxas was inaugurated on May 28. In his inaugural address he reiterated the loyalty of the Filipino people to the American flag and urged continued relations with the United States on friendly terms and for mutual advantage. He emphasized the two aspects of Philippine freedom: the Philippine Republic was face to face with the harsh fact of a ruined and bewildered world in search of peace and security from war; it was challenged by social insecurity, hunger, unemployment, internal disorder, disrupted educational institutions, and paralyzed communications.

He declared that "a new era has come to the Orient" and that the Philippines is committed to the cause of world peace and to follow the international program of the United States; today, he added, "the concept of independence is overshadowed by the dynamic growth of international interdependence." He minced no words in presenting the broad social problems confronting an independent Philippines and said that only work and more work by the people could save the people from want.

Because of these facts, he took the first steps regarding the international relations of the new Republic. He signed Republic Act No. 1 creating the Department of Foreign Relations.

TREATIES WITH THE UNITED STATES

On the day that the Philippines was granted her independence, she entered into a treaty of general relations with the United States, under which the latter agreed, among other things, to recognize the independence of the former as a self-governing nation and to represent the interests of the Republic in the countries where there are as yet no Philippine representation. Other treaties and agreements since then have been concluded between the two countries, among them the copra and oil agreement, and that providing for the transfer without cost to the Philippines of United States surplus property with a book value of over 1,000,000.000 pesos; and the Philippine Military Assistance Act, passed by U. S. Congress on July 31, 1946 and accepted by the Philippines, giving to the latter certain equipment, supplies, material, and technical advice on condition that the Philippines will not transfer or dispose the same without previous consent of the United States nor disclose any information concerning the same.

Vice-President Quirino and F. S. Tomlinson, British Chargé d'Affaires of the British Consulate General in the Philippines, exchanged notes in August and September regarding the succession of the Philippines to the United States in the ownership and administration of the Turtle and Mangsee islands north of Borneo after giving one-year notice beginning on Sept. 19, 1946 as stipulated in the treaty between the United States and Great Britain in 1932.

An air pact with the United States, pledging reciprocal air landing facilities to the airstrips of both countries, was concluded.

MILITARY AND NAVAL BASES

Negotiations for the grant of military and naval bases to the United States were also taken up in a long series of conferences between high Filipino and American officials since July 4, and details were taken up by Ambassador McNutt with President Truman in the early part of December. A mutual agreement on the matter is expected to be reached by next year, since details only remain to be worked out.

GOVERNMENTAL ORGANIZATION AND APPOINTMENTS

Vice-President Elpidio Quirino wa appointed Secretary of Foreign Affairs on June 29, 1946. The Department of Foreign Affairs was organized with Dr. Bernabe Africa as Under Secretary. Dr. Carlos P. Romulo was appointed early in July to represent the Philippines in the United Nations General Assembly Joaquin M. Elizalde was named Philippine Ambassador to Washington a few days later. In early September, José P. Melencio was named Philippine Consul General in New York, and in November Judge Roberto Regala was appointed Philippine Consul General in San Francisco

Three months after the recognition of the American embassy and consulate general's office in the Philippines, Chen Chih-Ping was recognized by the Philippine Republic as Chinese minister. Gaston Willoquet who previously represented France as chargé d'affaires was raised by his government to the rank of minister in November. Linton Harry Foulds was recognized as British minister to the Philippines in the last week of October. Dr. Vittorio Strigare was recognized as Italian chargé d'affaires in November.

APPOINTMENT OF UN DELEGATES

Philippine participation in the United Nations General Assembly was reinforced by President Roxas when he appointed on Nov. 1 Senators Mariano J. Cuenco, Pedro Hernaez, Representatives Raul Leuterio and Lorenzo Sumulong as Philippine delegates to the General Assembly to assist chief Philippine delegate Carlos P. Romulo. A week later, Senators Proceso Sebastian, Salipada Pendatun, Representative Francisco Ortega, Dr. Gabriel Mañalac, and Dr. Encarnacion Alzona were named to compose the Philippine delegation to the United Nations Educational and Scientific Conference in Paris on Nov. 21, 1946.

RELATIONS WITH THE UNITED STATES

As President Roxas has rightly said, the Philippines as a member of the family of free nations could not afford to isolate herself. He has repeatedly advocated close and intimate cooperation with the foreign policy of the United States. "As we turn to build the foundations of our Republic," he declared in a radio broadcast to the United States, "and establish economic and diplomatic relations with all the other free nations of the earth, we are pledged and will remain pledged to the maintenance of friendly ties with America as the cornerstone of our foreign policy."

FOREIGN POLICY

In another address he elaborated this thesis and said: "We will be as wholehearted as any nation in our devotion to the ideals of an indivisible peace and indivisible world. We will maintain with all our strength and all our power our obligations to the United Nations and to the causes set forth in the United Nations charter to which we are a signatory. In the same way, we will maintain friendly and honorable relations with all our neighbors and look forward to the day when peace and security will be maintained by mutual consent and by the collective conscience of mankind."

INDUSTRIAL RECONSTRUCTION

First and foremost of these problems was rehabilitation. The two bills passed by the United States Congress—the Bell Trade Act and

War Damage Act—are expected to go a long way in the reconstruction of what has been destroyed or damaged during the war. Even then, at the year's end, a move was under way to correct the deficiencies and inequalities contained in these two measures.

To meet the pressing need of rehabilitation and reconstruction of war-destroyed industries as well as their expansion, the Congress of the Philippines passed a bill approved by President Roxas on Oct. 29, creating the Rehabilitation Finance Corporation. The capital of this corporation has been placed at 300,000,000 pesos. This capital will be taken from the resources of the Government's Agricultural and Industrial Bank and from the balance of the surplus property turned over to the Philippine Government by the U. S. Army. The Rehabilitation Finance Corporation will lend capital to businessmen and government entities which are self-liquidating and wish to engage in any enterprise in the free and open market. The beneficial effect of this gigantic corporation on the national economy cannot be overestimated. Observers predict that, when the corporation starts operation, the hum of activity in trade, commerce, and industry will start.

WAR PROFITS TAXES

To raise much needed revenue, and penalize war profiteers during the Japanese occupation, the War Profits Tax bill became a law in September. The law taxes persons who have accumulated property between Dec. 8. 1941 and Aug. 4, 1945 in excess of 6,000 pesos. A 50 per cent tax is placed on property in excess of 6,000, but below 50,000 pesos; 60 per cent on that in excess of 50,000, but below 100,000; 70 per cent in excess of 100,000, but below 300,000; 80 per cent in excess of 300,000, but below 500,000; 90 per cent in excess of 500,000 but below 1,000,000; and 95 per cent in excess of 1,000,000.

PUBLIC MARKET STALLS

Republic Act No. 37 gives preference to Filipino citizens in the renting of public market stalls in order to encourage Filipinos in the small-scale retail trade and to enable them to better compete with aliens in the retail merchandising field. Aliens in the Philippines control about 75 per cent of the volume of domestic trade today. The intent of the law is to see that more of the Philippine business should be in Filipino hands. According to this act, the aliens have until Dec. 31, 1946 to hold their present public market stalls. However, if there should not be enough Filipinos to apply for the stalls now held by aliens, the latter may continue to hold the same until Filipino applicants register for them. The act took effect on Jan. 1, 1947.

PHILIPPINE GI BILL OF RIGHTS

The President approved late in 1946 Republic Act No. 37 known as the "Philippine GI Bill of Rights." This law created the Veterans Board and set aside ₱20,000,000 to meet veterans' claims. Among the benefits to be derived from the local counterpart of the GI Bill of Rights are: 1) payment of tuition fees and book allowance for veterans at government expense; 2) hospitalization for the sick and disabled; and 3) priority in the distribution of public lands by the National Land Settlement Administration; and 4) credit from any banking institution to be guaranteed by the Government.

NATURAL RESOURCES AND PUBLIC UTILITIES

The parity question, or the grant of equal rights to Americans in the development of the natural resources and in the operation of public utilities, was discussed with much heat by administration leaders and the minority party at the close of the year. This concession was the result of the executive agreement entered into between the Presidents of the United States and the Philippines pursuant to a provision of the Philippine Constitution. The provisions of the Philippine Trade Act of 1946, known as the Bell Act, were approved as a constitutional amendment by the Congress of the Philippines and called for a plebiscite on March 11 1947 to adopt or disapprove such amendment. The equal rights provision of the Trade Act of 1946 is Section 341—"Rights of United States Citizens and Business Enterprises in Natural Resources" which states: "The disposition, exploitation, development, and utilization of all agricultural, timber, and mineral lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces and sources of potential energy, and other natural resources of the Philippines, and the operation of public utilities, shall, if open to any person, be open to citizens of the United States and to all forms of business enterprises owned, controlled, directly or indirectly, by United States citizens."

UNEMPLOYMENT

By the end of 1946, the unemployment problem taxed the minds of high government officials. The withdrawal of many U. S. armed forces units from the Philippines and the demobilization of Philippine Army personnel were factors that added to the aggravating problem. The reorganization of the government was expected to be finished by early next year.

MAINTENANCE OF PEACE AND ORDER

Another problem of pressing importance is that relating to the maintenance of peace and order. In a land that has been overrun by the enemy and where, as a result, looting and plunder have been regarded as virtues to be prized, it was not easy to restore internal peace and reestablish a reign of law and order, especially in view of the thousands and thousands of firearms held by unauthorized individuals, weapons which had been distributed freely and indiscriminately by American troops to Filipinos during the liberation. In Central Luzon, dissident elements known as *Hukbalahaps* paid little or no attention to the appeal of the Government to surrender their arms. Contrary to the opinion prevailing in some quarters, especially in some sections of the American press, the peasant elements in Central Luzon, from whose ranks the *Hukbalahap* organization has grown, are definitely not in revolt against the Government nor is the pacification campaign directed against them. The Government started its social justice program to alleviate the economic injustices, which have plagued the Filipino peasants for centuries, by outlining and putting into effect the purchase of big landed estates for eventual redistribution to tenants. The Administration, in cooperation with the Congress of the Philippines, has undertaken reforms in agrarian legislation, one of which is the revision of crop-sharing by allotting 70 per cent of the crop to tenants and 30 per cent to landlords.

Complex as the problems are which face the Republic of the Philippines, President Roxas' Administration is confident that it will ultimately emerge victorious in the struggle for reconstruction and in its efforts to provide the most ample opportunity to the masses of the people for a better economic and social life. The Republic of the Philippines knows that it faces another year of readjustment but is confident that conditions will improve and the terrible scars of a war-ravaged land will be slowly effaced.

THE UNITED STATES AND LATIN AMERICA

By Graham H. Stuart
Professor, Stanford University

GOOD NEIGHBOR POLICY

During 1946 it appeared that the good neighbor policy instituted by President Franklin D. Roosevelt in 1933 and maintained with considerable success throughout the period of the Second World War had begun to deteriorate. The failure of the United States to bring about a cooperative relationship with Argentina was undoubtedly the principal cause of the unsatisfactory development. In a radio broadcast in January, 1946, Assistant Secretary of State Braden, speaking on the subject "What Is Our Inter-American Policy," declared that the United States does not favor a policy of unilateral intervention but one of joint action. For that reason we approved the proposal of the Foreign Minister of Uruguay which declared that notorious and repeated violations of human rights by any country endangered the peace and was a matter of concern to other countries. In other words we felt that collective multilateral action was justified after full consultation.

It soon became evident that the other Latin American states were not enthusiastic over intervention of any sort and consequently the conference, which was scheduled to meet early in 1946 to make the Act of Chapultepec into a permanent treaty, was indefinitely postponed. However, in its relations with the Latin American Countries other than Argentina, the United States continued to make every effort to retain their confidence. For example, when Assistant Secretary of State Braden was chosen Chairman of the Governing Board of the Pan American Union he refused to accept on the ground that the principle of rotation which had been determined upon at the Rio Conference should be instituted immediately. As a result Dr. Antonio Rocha, the Special Ambassador of Colombia to the Pan American Union, was elected Chairman of the Board.

U. S. RETURN OF MILITARY AND NAVAL BASES

Another effort to strengthen the confidence of the Latin American states in United States fair dealing was the returning of military and naval bases acquired for the protection of the continent during the war. The long delay in the peace negotiations and the failure to end the war legally gave rise to a fear lest the United States might take advantage of the situation to retain these strategic areas. The bases in Brazil were of considerable size and importance and, as an evidence of her policy, the United States had returned all of them to Brazil by the end of 1945, and by Feb. 1, 1946, with the return of Salinos to Ecuador, all military bases on the South American mainland had been given back. The base in the Galapagos Islands, of vital importance in the protection of the Panama Canal, was retained until July 1 when the last of the American forces were withdrawn. The El Pato air base in Talara, Peru, was returned Oct. 29, 1946.

On May 20, 1946, the last of the military bases in Cuba, including the San Antonio de los Baños air base near Havana, valued at about $20,000,000, was turned back, thus leaving only the Guantanamo Naval Base which has been held ever since Cuba obtained her independence. In June, the United States turned over to the Nicaraguan government the $2,000,000 naval base at Corinto and at the same time offered a huge amount of surplus property in exchange for a tract of land suitable for a new United States Embassy. In the first nine months of 1946 the United States had turned back to Panama some 71 defense sites and promised to return 27 more before the end of the year.

INTER-AMERICAN MILITARY COOPERATION

For many years the United States had been sending military and naval missions for instructional purposes to those Latin American countries that requested it. This policy was actively pursued during the Second World War, and in February, 1946 the United States had 17 military missions in 13 Latin American countries. The program still holds, and in June, 1946 a military mission was sent to Venezuela and in October a naval commission to Colombia. The military aviation mission to Bolivia, arranged for in 1941, was renewed early in 1946. Under the authority of the Surplus Property Act, the Navy continued to send small ships and planes to Latin American countries even after the war was over. However, the Second World War showed that still greater coordination was necessary, and in the Conference on Problems of War and Peace, held in Mexico City in October, 1945 by the terms of the Act of Chapultepec, a mutual assistance pact was signed which obligated the member governments to assist one another to meet an attack or threat of aggression from any source whatsoever. It was further agreed that the pact would be implemented by the creation of a permanent military agency which would be charged with the preparation of proposals for a closer military collaboration among the republics.

In accordance with those agreements President Truman, on May 6, 1946, submitted a bill to the Congress authorizing a program of military collaboration with the other American states, including the training, organization, and equipment of the armed forces of those nations. The Inter-American Defense Board had recommended that it was highly desirable to standardize military organization, training methods, and equipment. The act permitted the Army and Navy to prepare a continuous general program, to provide additional training activities, and it authorized the President to transfer military and naval equipment by sale or otherwise to the countries participating.

On May 29, Secretary of State Byrnes appeared before the Committee on Foreign Affairs of the House of Representatives and declared that the Act of Chapultepec placed upon each of the American republics a responsibility to collaborate in the common effort to maintain the peace and security of all the Americas. This act was designed to permit the United States to play its part effectively in the general cooperative undertaking.

Although the seventy-ninth Congress came to an end without passing the bill, the War Department expected to have it re-introduced in the eightieth Congress. It felt that effective defense of the Panama Canal against such new agencies of warfare as the atomic bomb and guided weapons would require close military cooperation with the American Republics within 1,000 miles of the Canal Zone in every direction.

The only noticeable opposition to the bill from Latin America appeared in *La Epoca* of Argentina, which declared President Truman's plan to furnish arms and instructors for all Latin American armies anti-national and aggressive. Nevertheless in June, former Chief of Staff Carlos von der Becke visited the United States to discuss military cooperation. He was apparently given a friendly reception by Generals Eisenhower and Brett, but on June 18 the Department of State told General von der Becke that the way to get arms from the United States was to get rid of Nazis in high places. In fact, so long as Argentina refused to cooperate wholeheartedly in hemispheric defense, the Department of State felt that military aid to her might endanger the United States.

ECONOMIC COLLABORATION

The United States continued its financial and economic assistance throughout 1946. In the first six months, the Export Import Bank loaned over $15,250,000, largely to Brazil, Colombia, and Mexico. Mexico also requested a loan of $20,000,000 in order to purchase United States equipment for an electrification program. Chile wanted a credit of $3,400,000 for petroleum exploration and $13,000,000 for refining installations. Negotiations were conducted with Peru for a $30,000,000 credit; Ecuador wanted $4,000,000 for a new water supply; Nicaragua wanted a similar sum for an agricultural bank. In a supplementary lend lease arrangement, Brazil obtained $1,000,000 worth of industrial equipment and the same amount in ordnance and air force equipment.

TRADE AGREEMENTS AND INVESTMENTS

Among the commodity arrangements was a very important one with Cuba signed July 22, 1946, which would amount to over $2,000,000. The United States contracted to purchase the 1947 Cuban sugar crop of about 4,500,000 tons at 3.675 cents a pound with the possibility of a raise if the cost of living should rise. It was also agreed that the United States would purchase the 1947 crop of from 5,000,000 to 5,500,000 tons at the highest 1946 price. In addition, the United States agreed to purchase a substantial amount of industrial alcohol and blackstrap molasses.

The Department of State, through Assistant Secretary Braden, emphasized the necessity of private capital again playing a more important role in the development of the Americas, and pointed out that "except in the crisis of war, government, with manifest exceptions, does not belong in business other than for legitimate and essential regulation or cooperation." In an effort to eliminate fears of economic imperialism under the guise of big business he specifically declared that the State Department "disapproves and opposes most strongly any intervention in local political affairs by American businessmen or companies."

There were many indications that private business proposed to follow Braden's suggestion. The United Fruit Co. expected to spend $15,500,000 for new properties in Central America and to make large increases of its banana plantations in Costa Rica, Guatemala, Honduras, and Panama. The company is also completing the largest banana growing project in Latin America in the Dominican Republic at a cost of approximately $20,000,000. The United States Rubber Co. announced a doubling of its investment in Latin America. Republic Steel planned to develop its rich and extensive iron ore properties in Mexico. Johns-Manville announced the establishment of asbestos production factories in the Latin American countries, including Mexico, Argentina, Brazil, and Colombia. Sears Roebuck Co. scheduled the opening of three new stores, one in Mexico and two in Brazil, an investment of $7,000,000.

INCREASED SHIPPING FACILITIES

Perhaps the greatest business expansion from the north was in transportation. The Grace Line planned a new fleet of twenty "Santa" ships to the Caribbean and west coast of South America and its *Santa Luisa* sailed on Sept. 30 on its maiden voyage. Meanwhile it proposed to charter 20 ships until the fleet of post-war "Santa" vessels was completed. Biweekly runs to Venezuela, Colombia, and Curacao were to replace the pre-war weekly runs. Lykes Brothers Steamship Co. inaugurated a new service to operate regularly from Mobile, Ala. to the South American west coast. Standard Fruit and Steamship Co. resumed its New Orleans Panama Canal freight service on Oct. 18. Shepard Steamship Co. announced plans for a new freight service between the United States east coast ports and South America. The Alcoa Steamship Co. planned to offer an improved service in the Caribbean and to east coast ports with the installation of 16 modern United States flagships.

EXPANSION OF AIR TRANSPORTATION

An even greater expansion of transportation by airplane was inaugurated. The United States, through the Civil Aeronautics Board, authorized new and extended routes to nine airlines covering routes to Mexico and points south: American, Braniff, Chicago and Southern, Colonial, Eastern, National, Western, Pan American and Pan American-Grace, including a new trunk line to Rio de Janeiro and Buenos Aires by Braniff Airways in competition with Pan American. Pan American outlined a program for a multiple daily "aerial commuter service" to all Latin American capitals which would carry 2,000,000 passengers annually and move 30,000,000 pounds of freight. Braniff Airlines announced that, by Jan. 1, 1947, it hoped to establish routes to 10 Latin American countries, including Bolivia, Brazil, Cuba, Colombia, Ecuador. Panama, and Peru. Panagra announced that New York–Santiago, Chile flight time would be cut to 40 hours, 15 minutes, and that it would extend its DC-4 service from Lima, Peru to Santiago, Chile. Avianca (Colombian Air Lines) began flights in December between Bogota, Barranquilla, and Miami, and Venezuela Airlines connected New York with Caracas *via* Havana. The airplane had placed the United States nearer than Europe to South America.

CULTURAL COOPERATION

The United States continued to expand its cultural cooperation activities. In the fiscal year 1945-46, the Department of State made grants-in-aid to send 47 American professors to American republics and brought seven Latin American professors to the United States. The United States Government also assisted in the maintenance of 27 independent and 20 branch cultured centers in the American republics. These centers served as important channels for scientific and cultural interchange between the people of the United States and those of Latin America, although the teaching of the English language to Latin Americans and Spanish and Portuguese to North Americans is the principal activity of these centers. The establishment of a representative library was also a vital factor in intercultural relations. In as much as cultural attachés have been assigned to most of our embassies and legations in Latin America, it is possible to direct the activities of a cultural nature so that the maximum results may be achieved.

RELATIONS WITH ARGENTINA

For the second consecutive year Argentina played the principal role in the relations of the United States with her Latin American neighbors, and the relationship was most unsatisfactory. The United States felt that Argentina was flagrantly violating the commitments made both at the Mexico Conference and at San Francisco, and the Péron government was blamed for this failure. On Jan. 17, 1946, the United States Chargé d' Affaires, John M. Cabot released to the Argentine press documents captured in Germany, proving that German money had financed the pro-Péron newspapers *El Pampero–Cabildo* and *Deutche La Plata Qeitung,* and he pointed out that the editors and staff of *El Pampero* were now the publishers of *La Epoca,* Péron's chief political organ, but this was a mere trial balloon.

On Feb. 12, 1946, 12 days before the presidential elections in which Péron was a candidate, at the order of Assistant Secretary of State, Braden, there was issued by the United States Government a memorandum on Argentina—the so-called Argentina Blue Book. Here in 131 pages of documented proof, largely from the files of the German Foreign Office, all of the top Fascist Argentine officials—Farrell, Péron, Ramirez, Castillo—were seriously implicated in a conspiracy with the Nazis to undermine the governments of the neighboring South American countries. It was conclusively proved that Colonel Péron and his aids had provoked a successful pro-Nazi revolution in

Bolivia and had almost succeeded in Chile. The Colonel's clique had furnished both political and economic aid to the enemy, had protected German agents, had permitted the German Embassy to subsidize pro-Nazi newspapers, and had allowed some 200 Nazi-controlled schools to remain open until late in 1945.

This "second atomic bomb" aroused mixed emotions in South America. *"La Prensa"* of Argentina expressed shame at the revelations, while *La Epoca* called the publication intervention and imperialism. The Péron group denounced the publication as an attempt to smear Péron on the eve of elections and aroused the patriotic nationalism of the people by shouting "Péron or Braden." Even the democratic papers, while conceding that the actions of Argentina were deplorable and inimical to continental solidarity against the Axis, were worried over the aspect of intervention and the time of publication.

The election results showed the unwisdom of the publication of the Blue Book. In a free election guaranteed by the army with the largest vote in Argentina's history cast, Juan Péron defeated José Tamborini by 1,479,000 to 1,210,000 popular votes but by the much more overwhelming electoral vote of 304 to 72. Apparently the Argentine people so resented outside interference that they supported a Fascist pro-Nazi government, for Péron won both houses of their Congress by large majorities.

Under the circumstances the United States could do nothing but accept the verdict although it brought Uncle Sam's prestige to an all-time low. Secretary of State Byrnes on April 8 declared that the United States would welcome Argentina into the fold if she would fulfill her promises under the Act of Chapultepec and clean up Axis influences. Foreign Minister Juan Cooke declared that the statements in the Blue Book were ridiculous and that Argentina had ousted the Nazis. The Péron press was more bitterly sarcastic and suggested that Byrnes and Braden be dismissed and a good neighbor ambassador sent to Buenos Aires.

Apparently the United States was a bit uncertain as to how to proceed. George Messersmith, who had served as Ambassador to Cuba, then to Mexico and previously as Assistant Secretary of State, was sent to Buenos Aires to cultivate more friendly relations. At the same time, Spruille Braden, Péron's bitter antagonist, remained as Assistant Secretary of State in charge of Latin American relations. Although General von der Becke was unable to obtain much satisfaction in his quest for arms in the United States—he was refused supplies until Argentina rid herself of Axis elements —the United States agreed to release approximately $700,000,000 Argentina gold frozen in the United States. Although Ambassador Messersmith seemingly proved himself *persona grata* with Péron it was announced in the press late in October that a presidential decree had freed Luding Freude, listed by the Blue Book as No. 1 Nazi, absolved him of all charges of espionage, and returned to him all his properties and funds. Early in December another Fascist named in the Blue Book, José Figuerola, was declared by Péron as administrator of Argentina's five-year social-military plan.

Shortly afterwards Ambassador Messersmith was recalled to Washington for consultation, and at the end of the year it was not clear whether Braden or Messersmith would prevail in the State Department's policy towards Argentina.

THE UNITED STATES AND THE MIDDLE EAST

By Vernon McKay
Research Associate, Foreign Policy Association

INTERNATIONAL RIVALRIES

Strategic considerations and oil resources gave the Middle East great prominence in 1946 as an area of international rivalries. Britain sought to reconcile imperial strategy with Arab nationalism, apparently basing this policy on the premise that Britain must have Arab friendship if it is to retain the strength and prestige of a major power. For Zionist aspirations in explosive Palestine, the British hoped to find a solution compatible with this premise. The French, resentful of their forced departure from Syria and Lebanon, and fearful of widespread discontent among the Arabs of North Africa, struggled to devise a new colonial system that would restore France's prestige as an imperial power. Meanwhile the influence of the Soviet Union and the United States in the Middle East became increasingly evident, with Washington showing a tendency to back Britain as a bulwark against Russian expansion. Although aggressive toward Iran and the Dardanelles, Moscow was cautious in the Arab states, leaving Britain and the United States to suffer the consequences of their Palestine policies. The Russians expressed concern for both Jews and Arabs, while extending their propaganda activities in the Arab world by publishing, in Arabic, writings which eulogized life among the 23,000,000 Moslems in the Soviet Union.

In an address delivered Sept. 19, Loy W. Henderson, Director of the Office of Near Eastern and African Affairs in the Department of State, declared that the main objective of the United States in the Near and Middle East is "to prevent rivalries and conflicts of interest in that area from developing into open hostilities which eventually might lead to a third world war." To achieve this objective, he said "our primary policy . . . is to take whatever measures may be possible and proper to promote directly and indirectly the political and economic advancement of the Near and Middle Eastern peoples and to support in that area the principles of the United Nations."

PALESTINE PROBLEM

Jewish terrorism reached new peaks of violence in Palestine, but further proposals to solve the problem were unsuccessful. The publication on April 30 of the 4,000 word report of the 12-member Anglo-American Committee of Inquiry marked a greater American role in the search for a solution. The ten recommendations of the report favored the Jews to the extent of suggesting removal of the 1939 British White Paper restrictions on Jewish immigration and land purchases, but struck at the heart of Zionist political aims by advocating that Palestine "be neither a Jewish nor an Arab State." The American Zionist Emergency Council, spokesman for 600,000 Zionists, was joined by other leading Jewish groups in approving removal of the White Paper restrictions but attacking the longer-range proposals as an infringement of Jewish rights. The Arabs promptly attacked the report by calling a protest strike of an estimated 1,000,000 people on May 3 in Palestine, Syria, and Lebanon. At various times thereafter the Arabs threatened to resort to arms, to refuse oil and other commercial concessions, to seek Russian help, to appeal to the United Nations, and to assault Jewish communities in other Arab states.

In recommending that 100,000 Jews be transferred to Palestine "as rapidly as conditions will permit," the Committee of Inquiry unanimously endorsed a suggestion made by President Truman eight months earlier. The President, in a statement accompanying publication of the report on April 30, expressed himself as very happy at this step, but declared that "the report deals with many other questions of long range political policies and questions of international law which require careful study and which I will take under advisement." British Prime Minister Attlee asserted the following day, however, that his country would take no action until it could "ascertain to what extent the United States will be prepared to share the resulting additional military and financial responsibilities."

In July came a significant new development—revival of the idea of partition of Palestine between Jews and Arabs. Dr. Chaim Weizmann, President of the Jewish Agency, declared on July 9 that partition "must not be rejected as a possible solution." New Anglo-American discussions beginning in London on July 12 produced the Morrison-Grady Provincial Autonomy plan which would have divided Palestine into four areas under a British central administration. This too proved unacceptable to both Arabs and Jews. The Jews objected both to the small size of the proposed Jewish Province and to the fact that the British would retain control of immigration. Some Zionists continued to demand the whole of Palestine, but Dr. Weizmann on Aug. 16 informed the British that the Jewish Agency would discuss partition if the establishment of "a viable Jewish state in an adequate area of Palestine is the purpose of the discussions."

Invitations to a new conference in London were rejected, however, by both Jews and Palestine Arabs. When this conference opened on Sept. 9, representatives of the Arab League states were the only parties present to deal with the British. The Arab answer to the Morrison-Grady plan was a counter-proposal advocating a provisional government of seven Arab and three Jewish ministers until the establishment of Palestine as an independent unitary state not later than Dec. 31, 1948. A legislature would be created in which Jewish membership would total not more than one-third, while any future Jewish immigration would require the approval of a majority of the Arab members of the legislature. Late in September the British adjourned the conference temporarily. President Truman expressed his regret at this action on Oct. 4, and called for immigration at once without waiting for a solution of the Palestine problem. The United States, he declared, "is ready to lend its immediate assistance." Sharp conflicts of opinion broke out among the Jews at the World Zionist Congress meeting in Basle, Switzerland in December, but the Congress closed on Dec. 24 with a reaffirmation of Zionist principles and a refusal "in the existing circumstances" to join in new Palestine talks scheduled for January, 1947 in London.

ARAB LEAGUE POLITICS

The Council of the youthful League of Arab States (Egypt, Syria, Lebanon, Iraq, Saudi-Arabia, Transjordan, and Yemen) held three sessions in 1946, the most publicized of which was an extraordinary session at Bludan, Syria, June 8-13. The Bludan delegates adopted a comprehensive ten-point program to defend the Arab position on Palestine. They also reiterated the League's support for Egypt's demand for evacuation of British troops and for union of the Anglo-Egyptian Sudan with Egypt; agreed to do their utmost to win independence for the former Italian colonies of Cyrenaica and Tripolitania; and agreed to work for the complete independence of other Arab countries (meaning the French and Spanish possessions in North Africa).

A boycott of Palestine Jewish products by the seven states of the Arab League was inaugurated on Jan. 1, 1946. Although it was chiefly significant as a political move enhancing hostility between Arab and Jew, the Palestine Government's trade figures for the first quarter of 1946 revealed that, while Palestine's exports were 31 per cent greater in value than exports for the same period in 1945, trade with the boycotting countries fell from one-fourth to one-twentieth of the total. According to an estimate based on Jewish industrial production for 1944, however, only 4.6 per cent of the total Palestine production is exported.

The Arab League states demonstrated their unity and intensity of purpose in fighting foreign domination of Arab lands, but contented themselves with planning rather than action in carrying out the second aim announced in the League's charter, namely, the promotion of economic and social development. The cultural committee of the League proposed a draft treaty for a unified educational system, including the exchange of students and teachers, and the development of museums and research. The committee on commerce, agriculture, and industry agreed that the Arab states should develop trade and communications, exchange commercial representatives and information; encourage tourists; establish chambers of commerce and industrial exhibits, fairs, and institutes; coordinate technical and scientific research; and unify Arab weights and measures. Other committees discussed the possibilities of a postal union, a customs union, a common citizenship and passport system, and a unified communications system. The Charter of the League requires, however, that such committee plans must be approved not only by the Council but by the individual states.

EGYPT

In Egypt, leading state in the Arab League, there were sporadic outbreaks of anti-British violence by nationalists who demanded withdrawal of British troops and incorporation of the Anglo-Egyptian Sudan into Egypt. The Cairo administration negotiated throughout the year for revision of the Anglo-Egyptian treaty of 1936, which authorized the maintenance in Egypt of 10,000 British troops and 400 Royal Air Force pilots with auxiliary personnel. Egyptian negotiators were continually embarrassed by irresponsible violence on the part of extremists in the political opposition at home. A cabinet crisis in February 1946 culminated in the resignation of Prime Minister Nokrashy Pasha's coalition government on Feb. 15. With considerable difficulty, 71-year-old Sidky Pasha formed a new ministry which, in turn, fell in December when Nokrashy Pasha returned to power. No treaty was completed, but Britain was reported to have accepted in principle the demand for withdrawal of its troops. On the Sudanese question, however, Britain insisted that the people of the Sudan should have the right to determine their own future, while Egypt continued its demands for recognition of Egyptian sovereignty. Sudanese opinion was divided between two factions, each claiming about 2,000,000 followers. One group sought independence for the Sudan while the other joined in Egypt's demand for "unity of the Nile valley."

IRAN AND THE BIG THREE

Outside the Arab states, the interests of the Big Three came into conflict in two other Middle Eastern countries—Iran and Turkey. The Iranian crisis was precipitated by an Iranian appeal to the United Nations Security Council on Jan. 19 for removal of Russian troops from the northern Iranian province of Azerbaijan, where a leftist revolt had culminated in the creation of an autonomous republic in defiance of the central government at Teheran. Russia was interested in acquiring oil concessions in Azerbaijan and in establishing a "friendly government" in an area bordering the U. S. S. R. Despite Gromyko's "walk-out" on March 27, 1946, during Security Council discussions of the problem, the Council refused to remove the Iranian appeal from its agenda. Meanwhile, negotiations between the Soviet Union and Iran produced an agreement for withdrawal of Russian troops and an oil concession to Russia, subject to approval by the Iranian parliament. The oil agreement, published April 8, provided for the formation of a joint Soviet-Iranian oil company with a 50-year concession, at the end of which Iran could either buy up the Russian holdings or extend the period of the joint company's operations. On May 23, the Moscow radio announced that all Russian troops had been withdrawn from Iran by May 9.

In May, it thus appeared that while the Soviet Union had withdrawn its troops from Iran, it had achieved its objectives of acquiring an oil concession and establishing a "friendly government" in Azerbaijan. As the end of the year approached, however, a striking new development came. With the Russians showing no signs of intervention, Iranian Premier Ghavam dispatched government troops into Azerbaijan, driving out the rebel government and restoring his own authority on Dec. 13. The Iranian parliament had yet ratified the oil agreement with Moscow.

TURKEY AND THE STRAITS

Another sharp difference between Russia and the West arose over the long-standing problem of controlling the Straits which link the Black Sea with the Mediterranean. At the Potsdam Conference in August, 1945, the Big Three had agreed in principle upon the revision of the Montreux Convention of 1936, which had given Turkey the right to remilitarize the Straits and had turned over to the Turkish government the functions of the international commission that had governed the Straits since 1923.

It was on August 7, 1946, almost a year after the Potsdam Conference, that the Soviet Union submitted to the Turkish government five proposals for revision of the Montreux Convention. The first three of these proposals dealt with the passage of commercial and naval vessels through the Straits, and coincided with American views. Opposition of the Western powers was aroused, however, by two additional Soviet requests designed to realize Russia's historic aim of controlling the Straits. The Soviet Union asked that the administration of the Straits be placed in the hands of "Turkey and the other Black Sea Powers," and that Turkey and Russia should "organize by joint means the defense of the Straits." The United States government, in a note handed to Russian Chargé d'Affaires, Fedor Orekhov, responded that "Turkey should continue to be primarily responsible for the defense of the Straits," and also rejected the Soviet proposal for control of the Straits by the Black Sea powers. Control of the Dardanelles, the American note suggested, "should be brought into the appropriate relationship with the United Nations."

After consultations with the United States, Britain, and France, the Turkish government on Aug. 22 rejected the Soviet proposals. Moscow answered on Sept. 24 by warning that, if Turkey were to take military measures in the Straits in common with certain non-Black Sea powers, this step would be considered to be a clear contradiction of the security interests of the Black Sea powers. Accepting the principle that an international conference should decide the problem, the Russian note maintained that the summoning of such a conference should be preceded by direct conversations between Russia and Turkey. Britain, however, notified the Russians on Oct. 9 that it could not agree to direct Russo-Turkish negotiations and saw no need for or purpose in continuing direct correspondence, but that His Majesty's Government was ready to attend an international conference to consider revision of the Montreux Convention.

DEADLOCK ON THE ITALIAN COLONIES

The political and strategic rivalries of the great powers were also strikingly demonstrated in the dispute over the disposition of the Italian colonies. After nearly a year of shifting proposals and counter-proposals to solve this problem, the Big Four Foreign Ministers could agree only on taking the colonies from Italy and postponing for another year the decision on their future.

It is of interest to note that the independence of Transjordan, formerly a British mandate, was formally announced in Amman on May 25 when the Emir Abdullah was acknowledged as King. Moreover, the last contingents of French troops withdrew from the newly independent states of Syria and Lebanon during 1946. On Sept. 19, King Abdullah, on returning from a visit to the Regent of Iraq, announced that Iraq and Transjordan were planning to form a union. These steps toward Arab freedom had significant repercussions in North Africa where the Arabs of Libya continued to demand independence and those under French rule expressed mounting discontent.

OIL AND MIDDLE EASTERN POLITICS

Although the strategic location of the Middle Eastern states at the crossroads of three continents would make them an area of great power rivalry even if they had no oil resources, the existence of rich oil deposits accentuates this conflict. In the background of the political disputes over the area in 1946 were a series of multi-million dollar international oil deals. The Standard Oil Co. of New Jersey and the Socony-Vacuum Oil Co. made arrangements to receive a share of the oil produced both by the Anglo-Iranian and Arabian-American companies (The Texas Co. and the Standard Oil Co. of California control Arabian-American). The British Government, which is the majority stockholder in Anglo-Iranian, contends that the agreement with the two American firms is purely a "commercial proposition." On Dec. 28, it was reported that the Iranian parliament will probably ratify the oil agreement with Russia, but that many Iranians favor inviting American oil interests into southeastern Iran in order to counterbalance Soviet influence.

STRENGTHENING OF U. S. MIDDLE EAST TIES

Many steps were taken by the United States in 1946 to strengthen its ties with Middle Eastern countries. Payne Field in Cairo, the largest and most modern air base in the Middle East, was formally turned over to the Egyptian Government on Dec. 15, but American civil aviation was assured full rights to use the airport, and American military aircraft were assured transit rights for six months with possible renewal thereafter. Meanwhile, the United States Army was developing the large airport of Dhahran on the Persian Gulf coast of Saudi-Arabia as the most important American air base in the Middle East.

The growing importance of the Middle East in American opinion was also signified by the strengthening of our diplomatic relations with the Arab countries. The United States legations in Egypt and Syria were elevated to embassies; the joint mission to Syria and Lebanon was terminated when Washington decided to appoint separate ministers to these two countries; and diplomatic relations were inaugurated with Saudi Arabia and Yemen.

THE FOREIGN SERVICE OF THE UNITED STATES

By Selden Chapin

Director General of the Foreign Service, State Department

THE FOREIGN SERVICE ACT OF 1946

The Foreign Service of the United States underwent a fundamental reorganization in recent months as a result of the passage, by the Seventy-Ninth Congress, of the Foreign Service Act of 1946. This act, which is the basic legislation for the Foreign Service as it operates today, represents a great advance from the point of view both of personnel management and administration.

It gathered together all previous legislation in one basic charter. It set up five basic groups of personnel: Ambassadors and Ministers, Foreign Service officers, Foreign Service Reserve officers, Foreign Service staff officers and employees, and alien personnel. This was a very important step, for the structure of the Foreign Service, through the addition over a period of years of various small categories, had become complex, difficult to administer, and in some cases inequitable.

The act also set up a new pay scale, bringing to date pay scales some of which had previously been set in 1855. The legislation also provided authority for the payment of needed allowances for Foreign Service personnel living abroad, in addition to the already existing representation and cost of living allowances. The new allowances included a transfer allowance, a maintenance allowance for residences of principal officers abroad, and the authority to reimburse expenses resulting from illness or injury incurred in line of duty.

In order to provide for a more highly trained Foreign Service, the bill established a Foreign Service Institute which, like the Army and

DIPLOMATIC PERSONNEL

AMBASSADORS

	Accredited by United States	Accredited to United States
Argentina	George S. Messersmith	Señor Dr. Don Oscar Ivanissevich
Australia	Robert H. Butler	Mr. Norman J. O. Makin
Belgium	Admiral Alan G. Kirk	Baron Silvercruys
Bolivia	Joseph Flack	Señor Don Ricardo Martinez Vargas
Brazil	William D. Pawley	Mr. Carlos Martins
Canada	Ray Atherton	Mr. Hume Wrong
Chile	Claude G. Bowers	Señor Don Marcial Mora
China	Leighton Stuart	Dr. V. K. Wellington Koo
Colombia	John C. Wiley	Señor Don Carlos Sanz de Santamaria
Costa Rica	Hallett Johnson	Señor Don Francisco de P. Gutierrez
Cuba	R. Henry Norweb	Señor Guillermo Belt
Czechoslovakia	Laurence A. Steinhardt	Dr. Juraj Slavik
Denmark	Josiah Marvel	Mr. Henrik de Kauffmann
Dominican Republic	George H. Butler	Señor Don Emilio Garcia Godoy
Ecuador	Robert M. Scotten	Señor Dr. L. Neftali Ponce[1]
Egypt	S. Pinkney Tuck	Mr. Mahmoud Hassan
El Salvador	John Farr Simmons	Señor Dr. Don Hector David Castro
France	Jefferson Caffery	M. Henri Bonnet
Great Britain	Lewis W. Douglas	Right Honorable Lord Inverchapel
Greece	Lincoln MacVeagh	Mr. Leon Melas
Guatemala	Edwin J. Kyle	Señor Don Jorge Garcia Granados
Haiti	Harold H. Tittmann, Jr.	Mr. Joseph D. Charles
Honduras	John D. Erwin	Señor Dr. Don Julian R. Caceres
India	George R. Merrell[1]	The Honorable Asaf Ali
Iran	George Allen	Mr. Hussein Ala
Iraq	George Wadsworth	Mr. Ali Jawdat[2]
Italy	James Clement Dunn	Signor Alberto Tarchiani
Mexico	Walter Thurston	Señor Dr. Don Antonio Espinosa de los Monteros
Netherlands	Herman B. Baruch	Dr. A. Loudon
Nicaragua	Fletcher Warren	Señor Dr. Don Guillermo Sevilla Sacasa
Norway	Charles Ulrick Bay	Mr. Wilhelm Munthe de Morgenstierne
Panama	Brig. Gen. Frank T. Hines	Señor Dr. Don J. J. Vallarino
Paraguay	Willard L. Beaulac	Señor Dr. Don Cesar R. Acosta[1]
Peru	Prentice Cooper	Señor Don Jorge Prado
Philippines	Paul V. McNutt	Mr. Joaquin M. Elizalde
Poland	Arthur Bliss Lane	Mr. Oskar Lange
Portugal	———	Dr. Joao Antonio de Bianchi
Spain	Vacant	Señor Don Juan Francisco de Cardenas
Turkey	Edwin C. Wilson	Mr. Hüseyin Ragip Baydur
Uruguay	Joseph F. McGurk	Dr. Juan Carlos Blanco
U.S.S.R.	Lt. Gen. Walter Bedell Smith	Mr. Nikolai Novikov
Venezuela	Frank P. Corrigan	Señor Dr. Don M. A. Falcon-Briceno[1]
Yugoslavia	Richard C. Patterson, Jr.	Mr. Sava N. Kosanovic

[1] Charge d'Affairs ad interim.
[2] Legation raised to Embassy.

DIPLOMATIC PERSONNEL

MINISTERS

	Accredited by United States	Accredited to United States
Afghanistan	Ely E. Palmer	Mr. Abdol Hosayn
Austria	John G. Erhardt	Dr. Ludwig Kleinwaechter
Ethiopia	Felix Cole	Ras H. S. Imru
Finland	Maxwell Hamilton	Dr. K. T. Jutila
Hungary	H. F. Arthur Schoenfeld	Mr. Aladar Szegedy-Maszak
Iceland	Vacant	Mr. Thor Thors
Ireland	David Gray	Mr. Robert Brennan
Latvia	———	Dr. Alfred Bilmanis
Lebanon	Lowell C. Pinkerton—designated	Dr. Charles Malik
Liberia	Rafael O'Hara Lanier	———
Lithuania	———	Mr. Povilas Žadeikis
Luxembourg	Admiral Alan G. Kirk	Mr. Hugues Le Gallais
New Zealand	Avra M. Warren	Sir Carl Berendsen
Saudi Arabia	J. Rives Childs	Sheikh Asad Al-Faqih
Siam	Edwin F. Stanton	Mom Rajawongse Seni Pramoj
Sweden	Louis G. Dreyfus, Jr.	Mr. Herman Eriksson
Switzerland	Leland Harrison	Mr. Charles Bruggmann
Syria	William Howell	Dr. Costi Zurayk
Union of South Africa	Gen. Thomas Holcomb	Mr. H. T. Andrews
Yemen	J. Rives Childs	———

Navy Staff Colleges, will train Foreign Service personnel progressively through their careers. The bill also provided that personnel should receive home leave after two years abroad, as compared with the former requirement of three years, and specified that three of the first 15 years of service of each Foreign Service officer must be spent in the United States.

In addition the new legislation set up a promotion-up and selection-out procedure by which it was hoped to keep Foreign Service officers developing continuously and to prevent the accumulation of personnel who had passed their peak of performance.

DUTIES OF THE FOREIGN SERVICE

The Foreign Service of the United States on December 31, 1946, numbered approximately 11,000 persons including ambassadors, ministers, Foreign Service officers, Foreign Service Reserve officers, Foreign Service staff officers and employees including clerks and guards, alien clerks and employees, and consular agents.

The officers and employees of the Foreign Service protect the interests of the United States in accordance with treaties and international law, and advise, protect, and assist American citizens resident, traveling, or having interests abroad. They seek to prevent or to correct practices which might discriminate against the United States or its citizens.

They negotiate treaties, conventions, and protocols regarding international intercourse, tariffs, shipping, commerce, and the preservation of the peace in accordance with the instructions of the Secretary of State and the President. They observe, analyze, and report on significant political, social, and economic conditions and trends in the country to which they are assigned. Since an important function of the Foreign Service is the promotion and protection of the foreign trade of the United States, trade inquiries, trade disputes and market conditions are the subject of numerous communications.

AMBASSADORS AND MINISTERS

Ambassadors and ministers are appointed by the President by and with the advice and consent of the Senate, some being career members of the Foreign Service and others appointed from private life. In January 1947, about 60 per cent of the ambassadors and ministers were appointed from the career Foreign Service.

Historically, embassies headed by ambassadors were maintained in the larger foreign countries and legations in smaller countries. In recent years. however, the United States has maintained embassies in all the other American republics and in some of the smaller countries abroad, so that the size or importance of a country no longer necessarily determines whether a minister or ambassador is appointed

Ambassadors and ministers receive salaries in four classes depending upon the salary classification of the post to which they are assigned. These classes are $25,000, $20.000. $17,500. and $15,000. In addition, they receive allowances which vary from post to post and from year to year.

FOREIGN SERVICE OFFICERS

Foreign Service officers are appointed by the President, by and with the advice and consent of the Senate Normally candidates take both written and oral examinations, and upon successfully passing these examinations are placed upon the eligible list from which the President makes nominations to the Senate. Under certain circumstances individuals may be appointed Foreign Service officers after serving specific periods of time in either the Department of State or in other branches serving in the Foreign Service.

Foreign Service officers are usually commissioned both diplomatic and consular officers and, aside from those who may be Chiefs of Mission (Ministers or Ambassadors) hold the titles of Minister,* Counselor, First, Second, and Third Secretary, Consul General, Consul or Vice Consul. according to their rank and the posts they occupy. It is usual for officers to have both consular and diplomatic titles simultaneously if they are assigned to an embassy or legation.

Except for officers who qualify for appointment after serving abroad either in the Reserve or Staff branches or in the Department of State, all Foreign Service officers start in Class 6, the lowest class. Salaries range from a minimum of $3,300 in Class 6, to a $13,500 maximum in Class 1 and the Class of Career Minister. Depending upon the post and its duties, Foreign Service officers serving overseas may receive, in addition to their pay, allowances for rent, cost of living, and representation. Promotion is determined on the basis of merit with a certain time in grade required in each class. Foreign Service officers are expected to progress through the grades, and a "promotion-up or selection-out" system is now in effect which automatically retires officers who fail to win promotion within a stipulated number of years. The age of retirement is normally 60, and upon retirement an officer is provided with an annuity, out of an annuity fund toward which he has contributed 5 per cent of his salary.

During an officer's career in the Service he is expected to serve where he is needed in positions for which he is deemed best qualified. Officers are utilized interchangeably in consulates, diplomatic missions, and in the Department of State, and are normally moved from one post to another and from one position to another every few years.

FOREIGN SERVICE RESERVE OFFICERS

Foreign Service Reserve officers are appointed by the Secretary of State for non-consecutive periods of not more than four years each. They may be assigned from other government agencies or from private life, and are appointed to any one of the six classes of Foreign Service Officers appropriate to their age, qualifications and experience. They must have outstanding qualifications of a specialized nature. Normally they specialize in economic, cultural, agricultural or other types of work requiring experience and special training.

---

* Certain senior Foreign Service officers are appointed to the class of Career Minister when their duties are such as to be comparable with those of an ambassador or minister. Examples are the second ranking officer at the American Embassy in London, the Consul General in Shanghai, and the directors of certain offices in the Department of State, all of whom hold the rank of minister.

Included in this category at the present time are a number of public affairs, cultural relations, and information officers. These officers may hold diplomatic titles such as Counselor, First, Second or Third Secretary or Attaché, and they handle informational and cultural work for their chiefs of mission.

FOREIGN SERVICE STAFF OFFICERS AND EMPLOYEES

Foreign Service staff officers and employees include all personnel other than Foreign Service officers and Foreign Service Reserve officers. They are appointed by the Secretary of State without special examination, appointments being based upon age, qualifications and experience. This group includes administrative officers and assistants, disbursing and accounting personnel, clerks, receptionists, code clerks, file clerks, guards, couriers and translators.

Members of the staff corps receive annual salaries according to a scale of 22 classes with a top of $10,000 and a bottom of $720. The usual starting pay of clerical personnel is $2,160 in Class 14. Staff corps members receive the same leaves of absence as Foreign Service officers, and also receive certain allowances depending on their duties and the conditions at the posts to which they are assigned.

ALIEN CLERKS AND EMPLOYEES

Alien clerks are appointed in the field, and salaries are determined by the local rates prevailing. The category includes clerks, translators, interpreters, custodians, messengers, chauffeurs, porters, doormen, guards, janitors and charwomen, electricians, telephone operators, gardeners, investigators, watchmen and maintenance men.

ADMINISTRATION OF THE FOREIGN SERVICE

The Foreign Service is administered by the Director General of the Foreign Service who is appointed by the Secretary of State from among Foreign Service officers in the Class of Career Minister or Class 1. He is assisted by a Deputy Director General, and the Office of the Foreign Service, a part of the Department of State. Within the Office of the Foreign Service there are six divisions: The Division of Foreign Service Personnel, the Division of Foreign Service Administration, the Division of Foreign Service Planning, the Division of Foreign Service Reporting, the Division of Training Services, and the Division of Foreign Buildings Operations.

The Board of the Foreign Service is an interdepartmental board charged with making recommendations to the Secretary of State concerning the functions of the Service. Policies and procedures governing the selection, assignment, rating and promotion of Foreign Service officers fall within its province as well as those governing the administration and personnel management of the Service. The Board is made up of three Assistant Secretaries of State, the Director General of the Foreign Service, and representatives from the Departments of Agriculture, Commerce and Labor.

DISSOLUTION OF THE LEAGUE OF NATIONS

By Arthur Sweetser
Chief, Washington Information Office, United Nations

"THE LEAGUE HANDS OVER"

Amidst the kaleidoscope of dramatic events which crowded the world's stage during 1946, one of the most permanent and far-reaching was the final and very orderly replacement of the League of Nations by the United Nations. During that twelve-month, the international agency which had grown out of the

First World War became history, while that which had grown out of the Second World War entered upon its detailed activities. The passage from one to the other was accurately, even nostalgically, conveyed in the title which the League authorities chose for their final pamphlet: "The League Hands Over."

The details of this transition were complicated. What to do, for instance, with the League's superb buildings and equipment at Geneva, with its staff and personnel, with the obligations entrusted to it in countless treaties, with special problems such as mandates, and finally with its own Covenant now superseded by the Charter? How fit into the situation the two greatest members of the United Nations, the United States and Soviet Russia, one of which had sponsored but never joined the League and the other had joined but subsequently been declared no longer a member?

These problems were taken up one by one, in separate committees of the two agencies, in occasional joint committees, and ultimately in the respective Assemblies. As a result of steady, cautious, and conciliatory negotiations extending over the whole year in London, Geneva, and New York, a very satisfactory transfer was made; the League was able to "hand over" with appropriate solemnity and dignity; and the United Nations was given the advantage of the League's remaining assets and resources.

THE UNITED STATES POSITION

The United States was in a curious situation during these discussions. Initiator of both agencies, it was called upon, as a leading member of the United Nations, to take a decisive part in the termination of the League of Nations which it had never joined. The reversal in America's policy towards world organization between 1920 and 1946 was most succinctly expressed by President Truman, when, standing on the rostrum before the delegates of 51 nations at the inaugural session of the General Assembly in New York on Oct. 23, he said: "After the First World War, the United States refused to join the League of Nations and our seat was empty at the first meeting of the League Assembly. This time the United States is not only a member; it is the host to the United Nations."

This statement was received with close attention. It was recalled with even closer interest when, two weeks later, another national election reversed the political control of Congress, as it had with such awesome consequences in 1918. Opinion was widespread, however, that there would not be this time the same sharp reversal of foreign policy as had thrown the United States into isolation in 1920. Instead, it was generally agreed there would be a continuation of the bipartisan approach initiated by President Roosevelt, maintained by President Truman, and fully shared by responsible Republican leaders. The American people had learned through two world wars that they could not find safety in isolation; they had dedicated themselves to the opposite policy of international cooperation.

The American Government, during 1946, took the position of leadership in the United Nations which in 1920 she had denied herself in the League of Nations. American delegations were present in all fields of international action. The year opened with American attendance at the first part of the General Assembly of the United Nations in London and closed with her continued attendance at the second part in New York. The United States contributed nearly three-quarters of the immense sum needed for the emergency work of the United Nations Relief and Rehabilitation Administration; welcomed the World Bank and Fund and the United Nations Food and Agriculture Organization when they established headquarters in Washington; took an active part in the United Nations agencies for civil aviation and for educational, scientific, and cultural cooperation; and, in the two pre-war agencies associated with the League of Nations, continued its membership in the International Labor Organization and assumed membership in the International Court of Justice. In all fields of international cooperation, the United States pursued an active policy in sharp contrast to that following the First World War.

It was natural, then, that, when questions arising from the dissolution of the League of Nations and the transfer of its functions and assets came before the United Nations, the United States, though a non-member of the League, should take part. This began in the Executive Committee of the Preparatory Commission in London, continued through the plenary Commission and the Assembly sessions in London and New York, and carried over into the committees constituted to negotiate with the League, Swiss, and Dutch authorities. It was explained as follows in a comprehensive article, "Transition from League of Nations to United Nations," by Henry Reiff in the *State Department Bulletin* (April 28 and May 5, 1946):

"The United States, as an important member of the United Nations, as a party to numerous separate treaties referring to the League or entrusting to it various non-political and technical functions, particularly those dealing with the control of narcotics, and as having displayed as a non-member of the League considerable interest in its humanitarian and economic work, particularly in the fields of health and women and children, was represented on each of these United Nations committees."

TRANSITION NEGOTIATIONS

The spirit of these negotiations, which the American representatives shared equally with representatives of League Member States, was well expressed by Mr. Rieff. "It was necessary," he said, "to effect a transition of limited scope between a general international organization about to be liquidated and a general international organization in process of being constituted. In the generation since World War I the functions, activities, powers, and duties of the League had proliferated amazingly both under the Covenant and in pursuance of several hundred separate treaties." While "it was agreed that, wherever possible, the United Nations should within its competence facilitate a dignified and speedy dissolution of the League," there was "a strong current of belief that undignified or inconsiderate treatment of the interest of the League and its members could hardly redound to the credit of the new Organization to which the loyalties of many governments and individuals were being transferred."

Many weeks passed in these negotiations. They eventually resulted in a "Common Plan for the Transfer of League of Nations Assets" approved by the United Nations Committee and the League's Supervisory Commission. This plan transferred to the United Nations the material assets of the League, which, with the Rockefeller Library and other gifts, totaled around 50,000,000 Swiss francs, and made other necessary provisions. It was accepted without change by the United Nations General Assembly in London on Feb. 12, 1946.

THE LAST ASSEMBLY'S CHALLENGE

On April 6, the twenty-first and last Assembly of the League came together in Geneva. Its purpose was not only to consider this Plan, dissolve the League, and transfer its assets to its successor; it gave many of the delegates the occasion to look back nostalgically at what might have been and forward hopefully at what could be. No American representative was present, however, at this last session to meet the question in many minds as to how different world history might have been if America had at the outset taken her place in the agency which she had formed. Instead, there stood outside, in the calm and tranquillity of the Court of Honor, a memorial to Woodrow Wilson, former President of the United States and the generally accepted founder of this first world agency for peace.

The Assembly concluded with a challenge for the future. Its spirit was perhaps best expressed in the final Report presented by Sean Lester, who had held to his post as Acting Secretary General throughout the war years and who was confirmed as Secretary General as from Sept. 1, 1940. His summation, repeated in different words by many delegates, opened as follows:

"The peoples of the world, searching for means to avoid the inhumanity and folly of war constantly becoming more terrible and destructive, made a covenant and a league of peace. They did not keep the covenant; they broke the league; and a new war smashed across Europe and leaped the oceans. Aggression and ambition, on one side, timidity of Governments and short-sighted vision of the peoples themselves, on the other, led straight to the catastrophe.

"The League of Nations as an organisation no doubt had faults, but it is dangerous nonsense to say that war came because of those faults. The League did not fail; it was the nations which failed to use it. That is the lesson of the last ten years and it is a vital and terrible warning for the next ten years. The old League of Nations is going and the new League takes the centre of the world's stage. Whether, in many respects, it is better than the machine which is being discarded is not the most important thing. Success will depend on how it is used, on the justice, wisdom and courage of leaders and, above all, on the vision and determination of the common people. Such truisms cannot be too often repeated in view of the immensity of the task which again faces humanity. The new generation of builders and makers must not be misled into thinking that any defect in the ideals or organization of the League of Nations was the cause of humanity's tragic failure. That failure was due rather to the statesmen and peoples of the League of Nations that contented themselves with lip-service, that could not face the lesser sacrifices to avoid the greater, and to those peoples and States which foolishly imagined they could be lookers-on."

The League Assembly confirmed the "Common Plan," and on April 19 the League became history. "The League," said the Assembly's President, Carl J. Hambro, "is handing over to the new body which has sprung from its loins and is to take over the work and traditions, made richer by the great adventure, made bolder by League timidity, wiser by League failures, and stronger by League frailty."

THE TRANSFER

Thereafter events moved rapidly. On July 19, 1946 representatives of the two agencies, League and United Nations, signed an agreement elaborating the details of transfer. On Aug. 1, the actual title to the superb buildings which the League had built on the shores of Lake Geneva finally passed, and this property became part of the United Nations. On that same date, also, 115 remaining officials of the League and many of its activities were transferred to the United Nations, the latter including Communications and Transit, Economic Intelligence Services at Geneva and Princeton, Opium Advisory Committee, Library Service, and Treaty Registration. On Aug. 8, the League's Secretary General notified all States Members that "The Treaty Registration Service of the Secretariat of the League of Nations was closed on July 1, 1946," and that future ratifications or registrations should be addressed to the United Nations; on Aug. 26, that all reports and information on the drug traffic should henceforth be sent to the United Nations; on Oct. 1, that as of August, the League "had had no further responsibility for activities in connection with communications and transit"; and on Oct. 16 that the League's health activities, temporarily transferred to the United Nations Department of Social Affairs on Sept. 1, and its responsibilities for epidemiological and public health statistics, were henceforth the responsibility of the

World Health Organization. On Dec. 7, the United Nations General Assembly in New York unanimously passed a resolution describing these arrangements as "final."

PRINCETON ACTIVITIES

A special glance should perhaps be directed retrospectively towards certain activities established in the United States in 1940 when the German armies threatened to engulf Switzerland. The Economic, Financial and Transit Department had been established at the Institute for Advanced Study in Princeton on the joint invitation of the Institute, Princeton University, and the Rockefeller Foundation. This action had contributed greatly not only to maintaining the League's valuable activities in the field but also to establishing the new technical agencies of the United Nations. The members of the group, which were officially described as having "enjoyed every facility for carrying on its research work and publications," were transferred almost *en bloc* to the United Nations; the League Assembly unanimously approved a warm resolution of appreciation to the three American institutions. Dr. Frank Aydelotte, Director of the Institute, made this further comment in his 1946 report:

"The members of the Economic Section of the League of Nations who have been in residence at the Institute since 1940 have now been appointed to the United Nations and transferred to the headquarters on Long Island. The members of this group were invited to Princeton in the dark days of 1940 when it looked as if the German armies might possibly invade Switzerland and when it seemed quite certain in any case that the war would seriously cripple their work in Geneva. Our purpose was to preserve the group intact in order that they might eventually be taken over by whatever international organization succeeded the League of Nations after the war, thus saving for the new organization the immense store of technical knowledge and experience gathered by these experts in twenty years of work for the League.

"It was by no means certain in 1940 that the Allies would win the war. No one could be sure at that time whether the League of Nations would survive or whether any similar international organization would be formed to replace it. Nor could we be certain in the third place that any such organization, if it came into being, would be prepared to take over intact the Economic Section of the League. It is a matter of great satisfaction to record that all three of our hopes have been fulfilled and that our purpose in bringing the members of the League Economic Section to Princeton has now been accomplished. The result is that the technical economic work of the United Nations can date its beginning not from 1946 but from 1920."

TRUSTEESHIP

The League activity which caused the greatest difficulty for the United States was the transfer of the mandates system into the trusteeship system. The American Delegation at the San Francisco Conference had taken a large part in the evolution of that system, but when it came to applying its provision to the Japanese mandated islands which were under naval occupation, a fundamental difference of opinion arose. Some wished to put the islands under the trusteeship system in line with what were felt to be commitments under the Atlantic Charter and elsewhere; others sought outright control or even annexation of territories which had cost many American lives and were considered vital to its future safety.

President Truman, early in January 1946, issued a statement calling for a strategic trusteeship, but the statement was not everywhere accepted as definitive, and the conflict continued. Just before the opening of the General Assembly, when it was hoped that all the trust agreements could be confirmed and the Trusteeship Council established, John Foster Dulles, American spokesman on the subject, stated that he would be embarrassed to take a position on other aspects of this question because of the lack of clarity of America's position towards its own claims. On Nov. 6, President Truman issued a fuller statement that the "United States is prepared to place under trusteeship, with the United States as the administering authority, the Japanese mandated islands" and other islands, and transmitted to the other members of the Security Council a draft agreement to that end, which, as he explained, would give the United States "administrative, legislative, and jurisdictional power" over the Marshall, Caroline, and Mariana islands as an "integral part of the United States," but within limits of provisions of the Charter of the United Nations. A trust area would be established embracing some 650 small islands with a population of 70,000, a land area of 1,049 square miles, and an ocean area of over 1,000,000 square miles.

This proposal raised further questions both domestically and within United Nations circles. The designation as a strategic area of so large a territory was unexpected; it had generally been thought such areas would be small localities. The United States did not, however, have to press the matter before the Trusteeship Committee of the General Assembly, as strategic areas were to be subject to the Security Council. Accordingly, the American Delegation played a large part in the general trusteeship debates in the Assembly and awaited the New Year to discuss its own project before the Security Council. With this exception and that of German South West Africa, the former League mandates were all taken over and the new United Nations Trusteeship system put into operation.

THE WORLD COURT

Nearly four decades embracing two world wars elapsed before the United States was able to assume its place in a world court of law first proposed to the other nations of the world by an American Secretary of State, Elihu Root, in 1907. "It should be your purpose," he instructed the American delegation, "to bring about in the Second Conference a development of the Hague Tribunal into a permanent tribunal composed of judges who are judicial officers and nothing else, who are paid adequate salaries, who have no other occupation, and who will devote their entire time to the trial and decision of international causes by judicial methods and under a sense of judicial responsibility."

Nothing effective happened, however, towards the creation of such a Court until the creation of the League of Nations provided a mechanism through which Secretary Root himself, sitting as an expert, could propose a method for selecting 12 judges from five times as many nations. For 20 years thereafter, every President and Secretary of State, whether Republican or Democratic, sought to effect American membership in the Court, but always without success owing to prejudice, mistrust, or misunderstanding in a Senate minority. When, however, a slightly amended statute was included as an integral part of the United Nations Charter, ratification became automatic, and the United States took its place as a member of the Court without any of the dire consequences predicted with such passion through two decades.

For the first time, on Feb. 6, 1946, the United States took part in the voting for the election of judges by the General Assembly and the Security Council of the United Nations meeting in London. America's interest was not merely passive; Secretary of State Byrnes was able to say in his report to President Truman that ". . . the final list of the fifteen Judges elected included twelve of the candidates for whom the United States Delegation, as instructed, had voted on the first ballot." Among them was a judge of American nationality, Green H. Hackworth, for many years Legal Adviser to the State Department. Judge Hackworth had been nominated in these new circumstances by the American group which had twice previously nominated Judge Manley O. Hudson, who had in turn twice been elected by the League Assembly and who had served on the bench for ten years.

The final step in completing America's membership in the Court came on Aug. 2 when the Senate, by the overwhelming vote of 60 to 2, accepted the so-called optional clause giving the Court compulsory jurisdiction in certain specified types of cases. This clause, also first proposed by Secretary Root in 1921, represented a step forward towards the establishment of a world law and jurisdiction, and an appreciable relaxation of uncontrolled national sovereignty. Its acceptance by the Senate almost without debate or opposition was another indication of the fundamental reversal in American foreign policy; it was fitting, in view of previous delays, that the United States should be amongst the first nations to deposit its ratification of this clause.

CONCLUSION

This last review in a series begun in 1930 could not end more appropriately than with the words chosen by Viscount Cecil of Chelwood, drafter of the Covenant and elder statesman of the League, to conclude his own last speech at the final Assembly: "The League is dead: long live the United Nations."

CHRONOLOGY OF INTERNATIONAL EVENTS, 1946

JANUARY

1—Siam terminates "state of war" with Great Britain and India.

2—War crimes trial of Nazi leaders reopens.

4—British Lieut. General Sir Frederick E. Morgan ordered to resign his position with UNRRA because of his previous announcement that Polish Jews were fleeing to American zone in Germany in order to leave Europe.

5—U. S. delegation to UN Assembly arrives in London.

8—President Truman endorses Big Three Moscow Agreement. General Morgan refuses to resign. British troops move against Indonesian rioters in Java.

9—Byrnes, American Secretary of State, announces that no atomic bomb secrets will be given away without Congressional approval.

10—UN General Assembly in London names Paul Henri Spaak, Belgian Foreign Minister, as President. Export-Import Bank lends $25,000,000 to Greece to buy supplies and equipment.

14—Secretary of State Byrnes asks General Assembly of UN to adopt Big Four's atomic resolution.

16—United States refuses to recognize acquisition of Indo-Chinese territories by Siam under Japanese occupation.

18—Council of Foreign Ministers meet in London to discuss peace treaty with Italy. Soviet Union's Gromyko appeals for support of Big Five veto power.

19—Iran asks Security Council to adjust her complaint of Russia's interference with her internal affairs.

20—Hungarian oil fields at Lispe seized by Red Army. Big Five meets in London. United Nations Security and Political Committee adopts a six-nation resolution on atomic energy.

24—General Assembly of UN passes a resolution to establish a commission to study control of atomic energy.

26—Moscow maintains that at Yalta conference, Russia had been promised Kurile Islands.

28—Discussion begins on dispute between Russia and Iran.

29—Trygve Lie of Norway named Secretary General of UN. General Morgan restored as Chief of Operations for UNRRA in Germany.

30—Great Britain announces that 1,500 Jews per month will be allowed to enter Palestine. Great Britain and Egypt agree to review their treaty status.

FEBRUARY

2—UN provisionally selects Westchester County, New York, as permanent headquarters.

6—Vishinsky withdraws charge that British troops in Greece constitute a threat to peace.

7—United States secures agreement of Russia and Great Britain to a temporary agreement of operation pending drawing up of a formal treaty with Italy.

8—Soviet Union opens its cases at Nuremberg against 21 Nazi leaders under indictment.

9—United States again bars Franco Spain from membership in the UN. Soviets ask $100,000,000 Italian reparations.

10—Vishinsky, Soviet Vice Foreign Commissar, renews his charge that British troops in Indonesia constitute a threat to world peace.

11—To provide full and free international air transportation, an Anglo-American air agreement is signed in Hamilton, Bermuda. To secure Russia's entry into the war, it is revealed that Roosevelt and Churchill in 1945, at Yalta, agreed to cede Kurile Islands to Russia; preserving *status quo* in Outer Mongolia; restoring Russian sovereignty over southern part of Sakhalin Island; restoring Russian lease on Port Arthur as a naval base; and, jointly with China, operation of Chinese and South Manchurian railroads.

12—UN votes consultative affiliation with Economic and Social Council of UN to World Federation of Trade Unions and American Federation of Labor. Along with 19 other Western Hemisphere Republics, the United States charges Argentine government with giving support to German war effort and refuge to Nazi politicos.

14—General Assembly of UN agrees on locating permanent headquarters in or about New York City.

15—UN Security Council agrees that British and French troops should be withdrawn from Syria and Lebanon.

18—Vatican raises 32 prelates to Cardinals; four from the United States.

20—Soviet Union admits securing secret data on atomic energy in Canada; brands what was secured as unimportant.

21—British Foreign Secretary Bevin offers to extend British-Russian treaty of alliance from 20 to 50 years.

23—London Conference of Jewish Organizations from 14 countries opens.

26—Moscow reports that greater part of Russian troops have been evacuated from Manchuria. French government orders closing of Spanish frontier.

27—Spanish close their side of Spanish-French border.

28—Great Britain and France sign civil aviation pact in London.

MARCH

1—Arab League backs Egypt, believing that Egypt acts within her rights.

2—Arab League demands abolition of British mandate over the Holy Land and calls for the creation of Palestine as an independent Arab state. Soviet Union announces beginning of withdrawal of its troops from Iran.

3—United States urges broadening of base of Bulgarian government —Russia admitted failure previously in this effort.

4—French Foreign Minister Bidault suggests a four-power conference on central administration for Germany. Great Britain, France, and United States join in urging people of Spain to throw Franco out by peaceful means.

5—Speaking at Westminster College, Fulton, Missouri, Winston Churchill suggests a fraternal association between the United States and the British Empire in order to stem "expansive and proselytizing tendencies" of the Soviet Union. Secretary Byrnes supports China for resisting Russian demands in Manchuria; he also protests Russia's retention of troops in Iran.

7—Soviet Union troops in Iran after March 2 deadline arouse ire of United States. Russia asks Turkey to return Kars and Ardahan regions.

8—Molotov charges United States with violating Moscow agreement by urging broadening of Bulgarian government. Zionists plead that 1,000,000 more Jews be brought to Palestine during next ten years. UN opens monetary conferences at Wilmington Island, Savannah, Ga.; two units in session—the International Monetary Fund and the International Bank for Reconstruction and Development.

11—Soviet Union offers France wheat and barley to overcome shortages. Secretary Byrnes denies Russian charge of violating Moscow agreement as regards Bulgaria. United States refuses to endorse French plan to bring Spanish affairs before UN Security Council. U. S. Secretary of Treasury, Fred M. Vinson elected Chairman of World Bank and Fund in session in Georgia.

13—Moscow press protests presence of American troops in Middle East.

15—Iranian Premier Ahmad Chavam protests continued presence of Russian troops in his country. UN Secretary, Trygve Lie, arrives in Washington, D. C. Churchill again urges Russia to capitalize on sympathy of English-speaking people for people of Russia. At opening meeting of UNRRA in Atlantic City, President Truman lauds UNRRA as the "best instrument . . . to deal with the critical situation."

16—Russian Ambassador Andrei A. Gromyko makes public plea for good relations among Great Britain, United States, and Russia. British Foreign Secretary Bevin reiterates his offer of a 50-year friendship treaty with the Soviet Union. With available grain supply 40% short of necessary requirements, UNRRA Food Boards draft a plan at Atlantic City to spread the supply to help the entire famine area.

17—Russia begins to evacuate Bornholm, Danish island at Baltic Sea entrance. Russia negotiating for Iran oil concessions. Uniate Church of the Ukraine, allied with the Roman Catholic Church since 1596, breaks that bond and rejoins the Russian Orthodox Church.

18—Vatican states that break of Uniate Church is invalid. Answering the United States White Book condemnation of Franco, the Spanish Foreign Ministry charges that the United States, in 1943, engaged in espionage activities in Spanish North Africa and had planned an invasion of the Iberian Peninsula. Speaking at Columbia University, Winston Churchill admonishes Communists to study the life of the white ant.

19—After a 22-year break, the Swiss resume diplomatic relations with Russia.

20—Ex-President Herbert Hoover arrives in Paris to begin his survey of food problems in critical areas.

21—United States announces that it will sign no treaty for maintenance of continental peace and security if Juan D. Perón, Argentina, be one of the signatories.

22—Premier Stalin lauds UN as best means of preserving peace in the world. Trans-Jordan, no longer a mandate, signs mutual assistance pact and alliance with Great Britain.

23—Iranian Premier Ghavam states no additional Russian troops have entered Iran since March 2. Chinese Foreign Minister Wang Shihchieh announces plan whereby all Russian troops will have left Manchuria by end of April. French and Lebanese agree on removal of French troops and matériel before Dec. 31, 1946.

25—American delegation at UNRRA conference in Atlantic City charges that Russian armies in Austria have seized enough land to feed hundreds of thousands; Russian member, N. I. Feonov, leaves the meeting. Iranian government denies existence of any secret agreement with the Soviet Union. UN Military Staff holds its first meeting.

26—Security Council, despite Soviet objections places Iran's charges on its agenda. An appeal made to Security Council to assure a fair trial for General Draja Mikhailovitch.

27—Failing to have discussion of Iranian affairs postponed until April 10, Gromyko stalks out of Security Council session. Yugoslavia warned to stay out of Venezia Giulia. Big Five meet for second time and begin planning an international police force. Peace treaty drafts for Bulgaria and Hungary presented, by Russian delegate, to Council of Foreign Ministers in London.

28—UNRRA, meeting in Atlantic City, adopts drastic food saving program. Iran recalled before Security Council of UN to answer specific questions on Iranian situation.

29—UN Security Council orders both Soviet Union and Iran to answer, by April 3, the charge of a secret agreement existing as to removal of Russian troops from Iran. Position of Director General of UNRRA accepted by Fiorello H. LaGuardia. Following Perón's election to Presidency of Argentina, all United States Blue Book charges are denied by Argentinian government.

30—China reports movement of Russian troops from Manchuria to Korea. Treaty of friendship signed by Turkey and Iraq.

APRIL

2—Russian troops leave Iran, crossing into Soviet Union territory. Bevin addresses British Parliament for revision of Anglo-Egyptian Treaty of 1936. India pleads for immediate food aid to prevent millions from starving. Firing squad executes General Masaharu Homma, notorious originator of the "Death March of Bataan."

3—Security Council receives replies of Iran and Soviet Union as to negotiations between them. May 6 pledged as date when all Soviet troops will have been withdrawn from Iran; no political or economic concessions involved. International Court of Justice of UN meets for first time in The Hague, Netherlands.

4—UN accepts Russia's promise of May 6 withdrawal from Iran. Despite United States condemnation of Perón, Brazil pledges continued friendly relations with Argentina. British, in view of hostile attitude of Albanian government, refuse to send a minister to that country, nor will they entertain one from Albania.

5—Iran announces complete agreement reached with Russia on all matters discussed between them.

7—Gromyko calls for removal of Iranian issue from UN Security Council agenda.

8—Final meeting of League of Nations Assembly opened by Norwegian Dr. Carl Hambro, President of the Assembly. Austria asks for a seat in the UN Assembly; Argentina walks out. In London, UN Special Committee on Refugees and Displaced Persons begins conferences. Perón's government advised that the United States will cooperate in hemisphere defense if Argentina will stamp out Nazi influences.

9—Gromyko resumes attendance upon UN Security Council sessions.

10—Nikolai V. Novikov named new Russian Ambassador to the United States; Gromyko relieved from the post in order to devote his full attention to UN.

13—Mikhailovitch, on trial in Yugoslavia, branded by Soviet newspaper as traitor war criminal, and German agent; United States criticized for not taking similar stand. LaGuardia appeals for immediate aid to avert European and Asiatic famine threat. Council of Arab League approves resolution providing common citizenship in all Arab states.

15—Civil war flares in China as Soviet troops begin to withdraw. Gromyko attacks Great Britain and United States, accusing both of using Iran as a pawn in power politics.

17—Franco government of Spain accused by Poland of creating international friction. Calls upon UN to sever diplomatic relations with Spain. Argentine government angling for restoration of good relationship with United States.

18—India renews plea for grain. UN petitioned to determine facts as to Spanish situation. Greece demands about 10% of Bulgaria's total land area. United States and Russia cooperate in attempt to establish a stable Korean government. League of Nations votes itself out of existence.

23—When Soviet Government fails to have Iranian question removed from UN agenda, Gromyko announces that Soviet Union will participate in no further Iranian discussion in the Council.

24—Contingent upon the holding of free elections, United States sets up a $40,000,000 credit for Poland.

25—Molotov, at opening session of Big Four Foreign Ministers' Conference in Paris, agrees to participation in all treaty discussions by all four countries.

26—Big Four meeting in Paris takes up Italian treaty and reparations problems. Bevin takes stand against decisions regarding Germany. Herbert Hoover stresses need for grain for India.

29—With the Soviet Union not voting, UN Security Council morally condemns Franco regime and asks for investigation of his government as a threat to international peace. Bevin asks that Libya be granted immediate independence. Byrnes brings up for discussion a four-power treaty to keep Germany disarmed for 25 years.

30—Austria's claim to South Tyrol rejected by Council of Foreign Ministers. UN begins formal investigation of Franco Spain. Great Britain seeks 50-year international regime for the Ruhr. Anglo-American Committee of Inquiry on Palestine rejects idea of a Jewish state but urges admission of 100,000 Jews into Palestine.

MAY

1—Zionist spokesmen criticize failure to back a Jewish state. Arab Higher Committee, protesting report on Palestine, calls a general protest strike for May 3.

2—International Military Tribunal for the Far East meets in Tokyo to arraign 28 major Japanese war criminals.

3—Big Four warned by Yugoslavia that no border adjustment will be accepted which would leave a Slavic minority under Italian rule. Announcement made that troops of Great Britain and France have been completely withdrawn from Syria.

7—Transylvania to be returned to Rumania per agreement reached by Council of Foreign Ministers.

10—Soviet Union agrees to placing Italy's African colonies under trusteeship of United Nations with Rome acting as administrator.

13—In his report on famine conditions, Ex-President Hoover asks for 3,500,000 tons of grain to prevent starvation.

15—Big Four agree on modified armistice for Italy whereby she gets control of all her affairs, except military.

17—Four-Power disarmament commission appointed to report on state of disarmament in four occupation zones of Germany. Franco Spain branded as a threat to world peace by UN Special Committee. United States and Canada work out a coordinating plan of handling their military forces to protect their joint interests in the North American continent.

20—Herbert Hoover asks for termination of UNRRA and urges establishment of a new international food agency.

21—Switzerland agrees to surrender $58,000,000 in looted gold shipped into her borders during war and also agrees to giving up 50% of Nazi capital in Switzerland. Iran announces Russian evacuation of Azerbaijan on May 6, as agreed upon.

23—Russian evacuation of Azerbaijan confirmed by Soviet Union.

27—Molotov charges that United States and Great Britain are trying to force his hand by insisting on a 21-nation peace conference in July; he insists on drafting of preliminary treaties before such a conference shall convene.

28—France and United States reach an agreement on settlement of war accounts; French reconstruction program is awarded $1,400,000 worth of American credits. Franco says his government is not engaged in atomic research. Seven Arab rulers meet in Cairo. Trade agreement signed by Soviet Union and Iceland.

31—United States demands that Groza government of Rumania hold free and fair elections. Great Britain does not subscribe to statement that government of Franco Spain constitutes a threat to world peace.

JUNE

1—Special committee of UN defines what persons are to receive aid under the Displaced Persons program.

3—Tokyo war criminals trial begins.

6—International Labor Office delegates, representing 32 nations, confer in Seattle, Wash. on minimum wage scale for seamen.

12—Bevin makes threat that Great Britain will sign separate peace treaties with whipped nations if Foreign Ministers fail to agree.

14—Bernard M. Baruch, speaking before United Nations Atomic Energy Commission, outlines position of United States as to atomic bomb.

17—UN Economic and Social Council adopts Russia's proposal that members of all Council commissions sit as governmental representatives.

19—Soviet plan for atom bomb control varies from that of Baruch. Russia wants to vest Security Council with the final authority, reserving power of veto to each of Big Four nations.

20—As 19-nation International Emergency Food Council is formed, the 3-nation Combined Food Board disbands. Draft constitution of International Refugee Organization adopted by UN Economic and Social Council. Foreign Ministers reach tentative agreement for eventual evacuation of troops from Italy and Bulgaria.

21—UN Economic and Social Council defeats Soviet proposal to accord World Federation of Trade Unions full participation, without vote.

24—Austrian claim for part of South Tyrol disallowed by Foreign Ministers sessions in Paris. On a seven to four vote, Security Council refuses to order UN members to sever diplomatic relations with Spain.

25—Committee established by UN Atomic Energy Commission to prepare draft of plan for world control and development of atomic energy.

27—Agreement reached by Foreign Ministers whereby Dodecanese Islands are given to Greece and Tenda and Briga area of northwest Italy to France.

JULY

1—Council of Foreign Ministers agrees to accept the ethnic line proposed by France as the western border of Yugoslavia.

2—Plans submitted by France and United States for international control of atomic energy. Paris conference deadlocked over Trieste question; Molotov objects to Byrnes' proposal that Trieste be directly responsible to UN Security Council.

3—Trieste to be established as internationalized free territory under UN Security Council.

5—Afghanistan seeks membership in UN.

8—A plan calling for establishment of an international atomic control agency is presented to the UN Atomic Energy Commission by Dr. Herbert V. Evatt, Australian Minister of External Affairs. Trans-Jordan applies for membership in UN.

10—Soviet Union makes its first clear declaration as to future of Germany; it opposes Morgenthau's plan for deindustrializing Germany; opposes federalization of Germany; and opposes French plan of detaching the Ruhr from Germany.

11—Russian Gromyko opposes Australian Evatt's control-of-atomic-energy plan. Byrnes and Bevin seek to hustle France and Russia into organizing their zones in Germany into a single economic unit.

12—Council of Foreign Ministers adjourns in Paris.

13—Siam presents border dispute with French Indo-China to UN for solution.

18—An agreement reached whereby Sweden shall account for all German assets in Sweden and turn over to the Allies $77,000,000 of such assets.

23—U. S. Ambassador to Russia, Lieut. General Walter Bedell Smith, protests in name of United States against use of Hungarian industrial production for Russian reparation payments and for maintenance of Soviet occupational forces. Arab League calls on England to install a new regime in Palestine before UN General Assembly meets in September, and, pending such action, that immigration and sale of Palestine land to Jews be regulated by British White Paper of 1939.

25—Gromyko rejects American proposal for semi-autonomous international atomic control agency.

26—Agreement reached by Great Britain, Canada, and the United States, contingent upon termination of UNRRA. Provisions of agreement were: (1) Creation of a new refugee organization to care for displaced persons; (2) the new World Health Organization to take over health activities of UNRRA; (3) the World Bank to take over rehabilitation functions of UNRRA; (4) the task of supplying food and other supplies for devastated areas to be a national matter, each nation finding aid wherever and however it could.

29—Paris Peace Conference opens for discussion of peace treaties with Italy, Rumania, Hungary, Bulgaria, and Finland. Australian Minister asks that every nation at the peace conference be on equal terms, making all recommendations by a simple majority vote.

30—Big Four Foreign Ministers present to Peace Conference the drafts of treaties for Bulgaria, Rumania, Hungary, Italy, and Finland.

31—Italy protests naval clauses in draft of treaty offered her.

AUGUST

1—Gromyko tells UN that American proposals for international inspection of atomic energy developments are contrary to the principles of state sovereignty. Russia claims that United States protest of Soviet policies in Hungary is groundless and rejects plan for American, British, and Russian joint commission for economic rehabilitation of Hungary.

2—Small nations lose fight to make Georges Bidault, President of France, the permanent Chairman of Peace Conference. British invitation to attend London Conference on Palestine accepted by Saudi Arabia, Trans-Jordan, Syria, and Lebanon.

3—Spaak of Belgium requests Peace Conference delegations to agree to acceptance of a two-thirds majority vote on all recommendations.

5—Jews vote to reject as unacceptable the British proposals as announced by Herbert Morrison. Yugoslavia and Netherlands sign a trade pact.

6—John Foster Dulles charges that behavior of Allied troops in Germany and the continued use of German prisoners of war for "slave labor" betrays Anglo-American promises made to the Germans. Entire captured reserve of the Hungarian National Bank, $32,000,000 in gold, returns to Budapest under Russian and American guard.

7—LaGuardia suggests dissolution of UNRRA by Oct. 1. Rules Committee of UN adopts British proposal for use of both two-thirds and simple majority voting in Peace Conference at Paris.

8—Yugoslavia demands reparations from Italy in the amount of $1,300,000,000. Molotov protests majority voting rule for Paris conference.

9—Uruguay and Russia sign a formal commercial treaty. Yugoslav fighter planes force U. S. plane down near Ljubljana.

10—UN proposal for an economic merger in part of German occupation zones rejected by France. Draft of Italian peace treaty denounced by Premier Gasperi.

12—In Paris conference, Albania, Mexico, Cuba, and Egypt are invited to express their opinions on Italian peace treaty.

13—Haifa Jews rebel against deportation by British of illegal immigrants.

15—Canada frees the last of its wartime conscientious objectors.

16—During a Moslem work stoppage (hartal) mass fratricide breaks out in India and streets of Calcutta are littered with corpses.

19—Yugoslavia aviators shoot down unarmed American transport plane; five fliers lose their lives.

20—UN moves into its new home at Lake Success, L. I. Italian amendments to draft peace treaty preamble rejected by 20-nation Italian commission.

21—Yugoslav Minister to Greece recalled in protest to "insults" in Greek press against Marshal Tito.

24—This date set as deadline for UN members to pay their dues. Turkey rejects Russian proposal for a joint Russo-Turkish defense of the Dardanelles.

26—France withdraws her offer of arbitration by the Hague Tribunal of her dispute with Siam over Cambodian boundary.

28—Paris peace conference defeats Australian reparations plan for Rumanian and Italian treaties.

29—Security Council admits Afghanistan, Iceland, and Sweden into UN membership; applications of Albania, Ireland, Outer Mongolia, Portugal, and Trans-Jordan are rejected.

30—Soviet Union voted $100,000,000 reparations by Italian Economic Commission in Paris.

31—Nuremberg trial of 21 Nazi war criminals ends. Palestine Arab Higher Committee rejects Great Britain's invitation to attend conference on Palestine.

SEPTEMBER

1—Street rioting in Bombay results in 60 deaths. Marshal Tito formally apologizes for death of five American fliers forced down in Yugoslavia.

2—Great Britain claims $11,520,000,000 reparations against Italy. UN Food and Agriculture Organization opens in Copenhagen.

8—Nine-year-old King Simeon of Bulgaria loses his crown as his countrymen vote to change to a Republic.

12—Henry Wallace, Secretary of Commerce, speaking at New York political rally, criticized for announcing views contrary to Secretary of State Byrnes' foreign policies.

20—Secretary Wallace dismissed from President Truman's Cabinet.

21—France's Constituent Assembly approves draft for a new constitution.

25—Feonoff, Russian representative, rejects report, made to UN, which calls for central commission to coordinate trade and industry among European nations.

27—King George II arrives at Elusis from London on his way to reassume Greek throne.

28—Australia holds triennial parliamentary elections in which the Labor party won.

30—Judges begin reading of judgments arrived at in trial of Nazi war criminals.

OCTOBER

1—Court imposes sentence on Nazi war criminals: Goering, Ribbentrop, Keitel, Kaltenbrunner, Rosenberg, Frank, Frick, Streicher, Sauckel, Jodl, Seyss-Inquart, death by hanging. Hess, Funk, Raeder, life imprisonment. Doenitz, 10 years imprisonment. Neurath, 15 years imprisonment. Schirach and Speer, 20 years imprisonment. Schacht, Papen, Fritzsche, acquitted. United States restores five-cent airmail rate, last used in 1932.

3—Secretary Byrnes, speaking to American Club in Paris, tries to allay French fears that the United States is on the verge of retreating into a policy of isolation. Canada settles its steel strike which had run since July 15.

5—Iceland's Parliament ratified treaty with United States allowing American military planes continued use of Meeks Field.

7—Vatican reports "minor excommunication" of Marshal Tito. Acting as a friend of both parties, Lord Killearn reopens negotiations in Batavia between the Indonesians and the Dutch. Japanese Diet, under leadership of Takeshi Yamazaki, adopts new national constitution.

11—Archbishop Aloysius Stepinac, after a twelve-day trial, is convicted of collaboration with the Germans and Croatian quislings; sentenced to 16 years at hard labor.

15—Paris conference ends. Hermann Goering, condemned Nazi, commits suicide in his cell in Nuremberg jail.

16—Remaining Nazi war criminals die on the gallows at Nuremberg.

20—American credits ranging from $25,000,000 to $50,000,000 extended to Turkey.

21—John L. Lewis, head of United Mine Workers in United States charges government with breach of contract and threatens soft coal strike.

22—Argentine Congress begins debate on President Perón's five-year plan for strengthening Argentina's governmental, social and industrial structure.

23—Addressing opening session UN General Assembly in New York, President Truman asks for speedy agreement on peace treaties by Big Four and also asks that UN act to remove war fears by breaking deadlock over plans for control of atomic energy. Col. Gen. Kurt Daluege, butcher of Lidice, hanged in Prague.

24—Led by Mexico, a group of little nations berate the big powers of their unsparing use of the veto in UN General Assembly. Winston Churchill charges that Russia has 200 divisions, more than 2,000,000 men on war footing in Soviet-occupied Europe. Trygve Lie condemns Franco regime in Spain and asks for restoration of democratic government in that country.

26—Chinese government troops capture Antung, strategic Manchurian port, opposite Russian-held

Northern Korea. Norway asks UN General Assembly to help Spanish people overthrow Franco's regime without bloodshed.

28—Prime Minister Attlee denies that Foreign Secretary Bevin had pledged Britain to acknowledge Egyptian sovereignty over the Sudan. Reds carry majority of votes for seats in Bulgarian Assembly.

30—United States outbids Russia in search for peace by recommending worldwide disarmament, backed by inspection system to ferret out hidden weapons.

31—Agreement reached among 18 nations to accept United States proposals for expansion of world trade and employment; full international conference ready to consider (1) international agreement on full employment policies; (2) trade barriers and discriminations; (3) restrictive business practices; (4) inter-government commodity arrangements; and (5) establishment as an agency of UN of an international trade organization. UN places three big issues on agenda for discussion in November: global disarmament, disposition of Franco Spain, and the veto power of the Big Five. House of Commons in England votes limited merger of army and navy.

NOVEMBER

1—United States balks at paying half of UN administrative costs in 1947. Belgium, Luxembourg and The Netherlands denounce Big Four domination of peace treaties.

2—Chinese government armies try to trap communist troops by gigantic battle offensive along 150 miles of Shantung's coast. Russia attempts to force UN into immediate discussion of world disarmament. UN Political Committee presented with two plans for concerted action against Spain. Holy Land virtually paralyzed by Arab strike on Balfour's declaration favoring a national home in Palestine for Jews.

3—President Truman takes firm stand to the effect that the United States will retain control of all Pacific bases needed for national security.

4—Council of Foreign Ministers of UN decides to hear representatives of Yugoslavia and Italy in bitter Trieste dispute.

5—In the United States, Republican party sweeps into control of both houses of Congress.

7—United States presents its own plan for UN trusteeship system and calls for decision on it by two-thirds of UN Assembly, denying other countries the right to try to shelve it by veto—as presented, Soviet delegates refused to comment on the plan.

8—Chiang Kai-shek orders government troops to cease firing; part of effort to arrive at revision of Chinese constitution. British troops in Palestine working under blackout conditions set up new guards for rail lines; Irgunists threaten further fighting and economic loss to British interests. United States withdraws its informal political mission from Albania—blow to hopes of that country to secure recognition. General MacArthur orders purge of over 250,000 Japanese rural officials who constituted the backbone of Japan's wartime jingoism.

9—President Truman erases wartime wage controls and nearly all remaining price controls in United States. United States plans $20,000,000 laboratory at Schenectady, N. Y., to study generation of power from atomic energy. UN admits Sweden, Iceland, and Afghanistan to membership.

10—UN rejects Trans-Jordan, Eire, Portugal, Albania, and Mongolia for membership.

12—President Truman approves former Attorney General Biddle's recommendation for establishment by the UN of a code of international criminal law. Announcement made that Rear Admiral Byrd will head a United States Navy task force in a combined training and scientific expedition to the Antarctic.

13—Lt. Gen. Lucius Clay, Deputy Commander of American occupation forces in Germany, reporting to President Truman, states that thus far America's outlay of $200,000,000 a year for occupation of Germany had only produced a trickle of products shipped to United States—$2,250,000 worth of hops. Not much hope of cutting expenses by putting Germany back on her feet again while Russia and France refuse to agree on plans for running Germany as an economic unit. British navy minesweepers sweep Corfu channel—Albania protests to UN.

17—Tentative agreement reached to settle United States west coast maritime strike, in effect since Oct. 1. Fear of general civil war sends commodity and currency prices to untold heights in Nanking and Shanghai; coal sold at $97 a ton, U. S. currency. Facing miners' strike, United States rations coal supply.

19—United States government issues writ to restrain John L. Lewis, Union boss, from precipitating soft coal strike. Communists lead in Rumanian voting. Moscow announces refusal to allow American and other foreign correspondents to make radio broadcasts from that city. UN General Assembly recommends that five little nations, previously denied admission, be received into membership, *viz.*, Albania, Outer Mongolia, Eire, Trans-Jordan, and Portugal.

20—John L. Lewis defies United States government injunction and soft coal strike begins at midnight.

21—China supports Russia in demand that reports be made to UN of disposition of all troops outside home borders and also backs demand of United States that such reports cover domestic forces as well. Britain's Bevin demands that UN begin immediate discussion of world disarmament problem.

22—Gems to the value of $25,000,000 unearthed by General MacArthur's agent in Japan. John L. Lewis, U. S. mine workers' Chieftain, served with writ charging contempt of court as 21 states adopt brownout regulations to conserve soft coal stocks.

23—United States initiates plan whereby noted German scientists are afforded chance, voluntarily, to come to America and eventually become American citizens. Molotov rejects all efforts to restrict use of veto in UN affairs. Greeks carry their border dispute problems to UN for settlement.

24—German voters in the United States occupation zone show the Communist Party a poor last in election returns. John L. Lewis, U. S. Mine Chief, appears in court to answer contempt writ; slated for later trial on the charge.

25—Russian scientists report new kind of disintegration of the atom nucleus. Poland notified that her failure to hold general elections has ruined her chances of further financial aid from the United States.

27—Egyptian students stage huge demonstration against their Premier and British Foreign Secretary Bevin.

28—Last of British troops to leave Java board their troopship at Batavia. Molotov accepts the principle of free navigation of the Danube River.

29—Greek rebel fighting breaks out on Turkish border. Russia agrees that Yugoslavia and Greece shall share equally in reparations from Italy and Bulgaria.

30—Perón announces five-year plan for development of Argentina. British military tribunal sentences General von Mackensen and General Maeltzer to death for civil massacre of 335 Italians in Rome's Ardeantine caves.

DECEMBER

1—King Michael of Rumania in opening Parliament pledges tie with Soviets. Miguel Aleman inaugurated as first civilian President of Mexico.

2—Byrd's Antarctic Expedition sails. United States invites Spain to unseat Franco. Britain and United States sign a provisional agreement for the economic fusion of British and American occupied zones of Germany.

3—John L. Lewis, United States Mine Union Labor Chief, found guilty of contempt of court in soft coal strike which threatens to cripple the United States. Socialist Vincent Auriol named President of new French National Assembly.

4—Court fines U. S. Mine Chief Lewis $10,000 and his Union $3,500,000 for guilty verdict in contempt of court case. Molotov agrees to United States arms reduction proposals as a basis for discussion and declares that the big-power veto would not apply to any system of controls and inspections in connection with arms limitation.

6—Greek Premier Constantin Tsaldaris arrives in the United States to confer with Secretary Byrnes about Albania, Bulgaria, and Yugoslavia supposedly inciting guerrilla warfare against Greek government. European satellite peace treaties virtually completed by UN. Some of the points agreed to were (1) Italy to pay $360,000,000 in reparations; (2) Italy to pay 66 2/3% of value of Allied property destroyed in Italy; (3) free use of the Danube River guaranteed; (4) denial of treaty benefits to any country which should refuse to sign a treaty; (5) fair prices to be agreed to by arbitration procedure for industrial equipment seized by Rumanian government for reparations to Russia; (6) motor torpedo boats to be permitted or denied uniformly in all treaties.

7—Martial law ordered by Iran in most of the principal towns in Mazandaran Province. Mine Chief Lewis orders United States soft coal miners to return to work. Secretary Byrnes proposes to Big Four Foreign Ministers Council to make slashing reductions in American, British, Russian, and French forces occupying Germany, Austria, Poland, and the Balkans.

8—The 54-nation full committee of UN calls upon Security Council to curb use of veto power.

9—UN Political Committee by 27 to 7 vote approves Belgian proposal for a partial, immediate diplomatic break with Spain. Council of Foreign Ministers agrees to meet in Moscow, March 10, 1947, to discuss treaties with Germany and Austria.

10—Azerbaijan Province in armed revolt against Iran government. Chinese Communists battle close to Paoting, capital of Hopeh Province. Attempt being made by 48-nation group to keep initial spirit of UNRRA alive. Great Britain creates furore in UN General Assembly with proposal for a complete accounting of all armies and armaments to be verified by a system of international inspection.

12—UN General Assembly votes to ask all UN members to recall immediately their ambassadors from Franco Spain. Socialist Leon Blum is elected head of French Government. Iranian Army moves on Tabriz, capital of Azerbaijan.

13—Russia yields to American demand that UNRRA be allowed to shift remaining relief shipments where needed. Paraguay quells uprising of anarchist elements which threatened to seize the government.

14—UN General Assembly votes to make its permanent capital in Manhattan's East Side; John D.

Rockefeller thanked for donating $8,500,000 towards purchase of necessary land and property.

16—UN assembly adjourns.

17—Russia asks UN General Assembly for more time to study whole question of atomic energy control. President-Premier Leon Blum forms all-Socialist Cabinet to run affairs of France. Turkish Army padlocks eight Communistic publications in Istanbul.

19—Churchill accuses British Labor Party of tyranny, conceit, and incompetence. United States, by offering huge credit to China, seeks to bring end to Chinese civil war. Two Swedish scientists, engaged in atomic research, produce the Aurora Borealis accidentally.

20—Russia rejects Canadian compromise calling for action on principles of American atomic control plan. Russia summarily orders United States submarine out of Darien.

21—Giant tidal wave, set in motion by earthquake, strikes southern Japan causing heavy property damage and loss of life.

22—Great Britain recalls her ambassador to Spain. Yugoslav court sentences 18 Nazi war criminals to death for Serbian murders. Great Britain and Russia sign an agreement opening way for unlimited trade between the two occupation zones in Germany.

24—Pope Pius XII declares that world stands in grave danger of new conflicts. Gen. Joseph McNarney grants amnesty to 800,000 "little Nazis" in American zone of occupation. France's Fourth Republic came into being. The provincial state of East Indonesia is formally proclaimed and becomes Asia's newest government.

26—Americans demand that French explain reports that they are stripping industries from French zone of occupation in Germany and transferring them to the Saar Basin.

27—U. S. Representative Bernard Baruch warns the UN that the United States will not give up the secret of the atom bomb unless a treaty for outlawing atomic weapons provides virtually automatic punishment of countries which break it.

28—General Charles de Gaulle refuses to be a candidate for President of France's Fourth Republic.

29—Members of Irgun Zvai Leumi, Jewish underground organization, kidnap a British major and three noncommissioned officers, strip them, and give them each 18 lashes as revenge for punishment meted out to one of their number while in a Jerusalem prison. Andrei Gromyko promoted to post of a Deputy Foreign Minister of Russia.

30—After more than six months of debate, the UN Atomic Energy Commission approves the United States Atomic Control Plan. Russia may use veto when it comes up before the Security Council.

31—President announces end of hostilities in Second World War as of noon.

PERIODICAL PUBLICATIONS

American Journal of International Law
700 Jackson Place N.W., Washington, D. C.

Current History
135 S. Second St., Philadelphia.

Foreign Affairs
58 East 68 St., New York City.

Foreign Policy Bulletin
22 East 38th Street, New York City.

Foreign Policy Reports
22 East 38th Street, New York City.

International Conciliation
405 West 117th Street, New York City.

II. INTERNATIONAL AFFAIRS AFFECTING THE UNITED STATES

Pacific Affairs
1 East 54th Street, New York City.
Pan-American Union Bulletin
Pan-American Union, Washington, D. C.
Time Weekly Newsmagazine (The)
9 Rockefeller Plaza, New York City.
United States Bulletin
State Department, Washington, D. C.
World Affairs
734 Jackson Place, Washington, D. C.
World Report
1253 24th St., N.W., Washington 7, D. C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

Academy of Political Science, Fayerweather Hall, Columbia University, New York City.
American Academy of Political and Social Science, 3457 Walnut St., Philadelphia, Pa.
American Arbitration Association, 9 Rockefeller Plaza, New York City.
American Association for the United Nations, 45 E. 65 St., New York City.
American Peace Society, 734 Jackson Place, Washington, D. C.
American Political Science Association, 105 Harris Hall, Northwestern University, Evanston, Ill.
American Society of International Law, 700 Jackson Place, N.W., Washington, D. C.
Carnegie Endowment for International Peace, 700 Jackson Place, N.W., Washington, D. C.
Council on Foreign Relations, Inc., 58 E. 68 St., New York City.
Council on World Affairs, Society for Savings Building, Cleveland, O.
Foreign Policy Assn., 22 East 38th Street, New York City.
International Reform Federation, 134 B St., N.E., Washington, D. C
National Council for Prevention of War, 532 17th St., N.W., Washington, D. C.
People's Lobby, Inc., 1410 H Street, N.W., Washington, D. C.
Women's International League for Peace and Freedom, U. S. Section, 1734 F Street, N.W., Washington, D. C.
World Peace Foundation, 40 Mount Vernon St., Boston, Mass.

REGIONAL

American Asiatic Assn., 1 Hanover Square, New York City.
China Society of America, 570 Lexington Ave., New York City.
Committee on Cooperation in Latin America, 156 Fifth Ave., New York City.
English-Speaking Union, 19 E. 54th Street, New York City.
Far East Conference, 11 Broadway, New York City.
French Institute in the United States, 22 East 60th St., New York City.
Netherland-America Foundation Inc., 10 Rockefeller Plaza, New York City.
Panamerican Society, Inc., The, 630 Fifth Ave., New York City.
Pan-Pacific Union, Inc., 1023 Alakea St., Honolulu, Hawaii.

PART TWO

AMERICAN GOVERNMENT

DIVISION III

THE NATIONAL GOVERNMENT

FEDERAL ADMINISTRATIVE ORGANIZATION

By William M. Schuyler
Editor, *The American Year Book*

THE PRESIDENT AND VICE PRESIDENT

President.—Harry S. Truman of Missouri (Democrat). Sworn into office as President of the United States, April 12, 1945, in succession to Franklin Delano Roosevelt, deceased on that date.

Vice President.—Vacant.

Executive Office of the President.—

White House Office—Matthew J. Connelly (Massachusetts), Charles G. Ross (Missouri), and William D. Hasset (Vermont), Secretaries.
Special Assistants to the President—John R. Steelman and Edwin A. Locke, Jr.
Special Counsel to the President—Clark M. Clifford.
Military Aide to the President—Major Gen. Harry H. Vaughan.
Naval Aide to the President—Rear Admiral James H. Foskett.
Executive Clerk in Charge of the White House Executive Offices—Maurice C. Latta.
Bureau of the Budget—James E. Webb, Director.
Council of Economic Advisers—Edwin G. Nourse, Chairman.
Liaison Office for Personnel Management—Raymond R. Zimmerman, Liaison Officer.
Council of National Defense—Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor.
Civilian Production Administration—J. D. Small, Administrator.
Office of Defense Transportation—J. M. Johnson, Director.
Office of Scientific Research and Development—Dr. Vannevar Bush.
Philippine Alien Property Administration—Vacant.
War Assets Administration—Robert M. Littlejohn, Administrator.

Presidential Vacancy.—By Act of Congress, in the case of vacancy occurring in the office of President through the death or removal of both the President and Vice President, the Cabinet Officers succeed to the Presidency in the order indicated in the arrangement of the following summary of the executive departments:

DEPARTMENT OF STATE

Secretary of State.—George C. Marshall.

Under Secretary of State.—Dean Acheson.

Under Secretary of State for Economic Affairs.—William L. Clayton.

Assistant Secretary of State for European, Far Eastern, Near Eastern, and African Affairs.—Vacant.

Assistant Secretary of State for Administration.—Donald S. Russell.

Assistant Secretary of State for American Republic Affairs.—Spruille Braden.

Assistant Secretary of State for Public Affairs.—William Benton.

Assistant Secretary of State for Occupied Areas.—John H. Hilldring.

Assistant Secretary of State for Economic Affairs. — Willard L. Thorp.

Legal Adviser.—Charles Fahy.

Special Assistants to the Secretary of State.—

Press Relations, Michael J. McDermott; Research and Intelligence, William A. Eddy; Special Assistants to the Secretary, Joseph W. Ballantine and R. Borden Reams.

Director General of the Foreign Service.—Selden Chapin.

Assistants to the Secretary of State.—Charles E. Bohlen, Blanche R. Halla, Carlton Savage, and Cassie Connor.

Offices and Their Directors.—European Affairs, H. Freeman Matthews; Far Eastern Affairs, John Carter Vincent; Near Eastern and African Affairs, Loy W. Henderson; American Republic Affairs, Ellis O. Briggs; Special Political Affairs, Alger Hiss; International Trade Policy, Clair Wilcox; Financial and Development Policy, Norman T. Ness; Economic Security Policy, Hamilton Robinson; Transport and Communications, Garrison Norton; Public Affairs, Francis H. Russell; International Information and Cultural Affairs, William T. Stone; Foreign Service, Julian F. Harrington; Departmental Administration, Carlisle H. Humelsine; Budget and Finance, J. Carney Howell (acting); Controls, Frederick B. Lyon; Intelligence Coordination and Liaison, Allan Evans (acting); Intelligence Collection and Dissemination, George R. Fearing, Jr.

DEPARTMENT OF THE TREASURY

Secretary of the Treasury.—John W. Snyder.

Charged with the management of the national finances; prepares plans for the improvement of the revenue and support of the public credit; superintends collection of the moneys paid from and into the Treasury; controls construction of public buildings, coinage and printing of money, *ex officio* chairman of the Federal Reserve Board.

Under Secretary of the Treasury.—Vacant.

Assistant Secretary of the Treasury.—Edward H. Foley, Jr.

Fiscal Assistant Secretary of the Treasury.—Edward F. Bartelt.

Special Assistant to the Secretary.—Andrew N. Overby.

Assistants to the Secretary.—Vernon L. Clark and Arthur Gardner.

Budget Officer.—Willard L. Johnson.

General Counsel.—Joseph J. O'Connell, Jr.

U. S. Secret Service.—James J. Maloney, Acting Chief.

Director of Public Relations.—Charles P. Shaeffer.

Administrative Assistant to the Secretary.—William W. Parsons.

Chief Clerk.—F. A. Birgfeld.

Commissioner of the Public Debt Service.—Edwin L. Kilby.

Commissioner of Accounts.—Robert W. Maxwell.

Director of Foreign Funds Control.—Orvis A. Schmidt.

Director of Monetary Research.—Harold Glasser.

Director of Research and Statistics.—George C. Haas.

Director of Tax Research.—Louis Shere (acting).

Comptroller of the Currency.—Preston Delano.

Has supervision of the national banks, their examination and reports; preparation and issue of national bank circulation; redemption and destruction of national bank notes. *Ex officio* member of the Federal Reserve Board.

Treasurer of the United States.—William A. Julian.

Charged with the receipts and disbursement of all public moneys deposited in the Treasury and Sub-

Treasuries and in national banks depositories.

Commissioner of the Bureau of Customs.—W. R. Johnson.

Commissioner of the Bureau of Internal Revenue.—Joseph D. Nunan, Jr.

Charged with general supervision of the collection of all internal revenue taxes, including the income tax, and the enforcement of internal revenue laws.

Director of the Bureau of the Mint.—Nellie Tayloe Ross.

Has general supervision of the mints and assay offices.

Commissioner of Narcotics.—H. J. Anslinger.

Director of the Bureau of Engraving and Printing.—Alvin W. Hall.

Produces all the securities and similar work of the Government printed from steel plates.

Director of Procurement.—Clifton E. Mack.

United States Coast Guard.—Admiral Joseph F. Farley, Commandant.

Committee on Practice.—John L. Graves, Chairman.

U. S. Savings Bonds Division.—Vernon L. Clark, National Director.

DEPARTMENT OF WAR

Secretary of War.—Robert P. Patterson.

Under Secretary of War.—Kenneth C. Royall.

Assistant Secretary of War.—Howard C. Petersen.

Assistant Secretary of War for Air.—W. S. Symington.

Administrative Assistant and Chief Clerk.—John W. Martyn.

Special Assistants to the Secretary of War.—Col. Tracy S. Voorhees, John H. Ohly, and Dean Rusk.

Executive Assistant to the Secretary of War.—Col. A. Robert Ginsburgh.

Office of Chief of Staff.—General of the Army Dwight D. Eisenhower, Chief of Staff; Gen. Thomas T. Handy, Deputy Chief of Staff.

Commanding General, Army Ground Forces.—Gen. Jacob L. Devers.

The Adjutant General.—Major General Edward F. Witsell.

The Inspector General.—Lieut. Gen. Daniel I. Sultan.

The Judge Advocate General.—Major Gen. Thomas H. Green.

The Quartermaster General.—Major Gen. Thomas B. Larkin.

Chief of Finance.—Major General William H. Kasten.

Surgeon General.—Major Gen. N. T. Kirk.

Chief of Engineers.—Lieut. Gen. R. A. Wheeler.

Chief of Ordnance.—Major General Everett S. Hughes.

Chief Signal Officer.—Major General H. C. Ingles.

Commanding General, Army Air Forces.—General Carl A. Spaatz.

Chief of the National Guard Bureau.—Major General Butler B. Miltonberger, Acting.

Chief of the Chemical Warfare Service.—Major Gen. Alden H. Waitt.

Chief of Transportation.—Major Gen. Edmund H. Leavey.

Provost Marshal General.—Brig. Gen. Blackshear M. Bryan.

War Department Special Staff.—Major General Willard S. Paul, Director of Personnel and Administration.

DEPARTMENT OF JUSTICE

Attorney General.—Tom C. Clark.

Represents the United States in all legal matters.

Solicitor General.—Vacant.

Assistant to the Attorney General.—Douglas W. McGregor.

Special Assistant to the Attorney General.—A. Devitt Vanech.

Assistant Attorneys General.—John F. Sonnett, Wendell Berge, Theron Lamar Caudle, David L. Bazelon, and Paul P. Rao.

Immigration and Naturalization Service.—Ugo Carusi, Commissioner.

Director of the Federal Bureau of Investigation.—J. Edgar Hoover.

Director of the Bureau of Prisons.—James V. Bennett.

Administrative Assistant to the Attorney General.—Salvator A. Andretta.

Director of Public Relations.—Timothy A. McInerny.

Chief of the Division of Accounts.—Eugene J. Matchett.

Chief Clerk.—Harvey C. Donaldson.

Librarian.—Matthew A. McKavitt.

Pardon Attorney.—Daniel M. Lyons.

Board of Parole.—T. Webber Wilson, Edward P. Reidy, and Douglas P. Lucas.

Board of Immigration Appeals.—Thomas G. Finucane, Chairman.

POST OFFICE DEPARTMENT

Postmaster General.—Robert E Hannegan.

Executive Assistant to the Postmaster General.—Frank Pace, Jr.

Special Assistant to the Postmaster General.—Samuel R. Young.

First Assistant Postmaster General.—Jesse M. Donaldson.

Second Assistant Postmaster General.—Gael E. Sullivan.

Third Assistant Postmaster General.—Joseph J. Lawler.

Fourth Assistant Postmaster General.—Walter Myers.

Director of Parcel Post.—Jesse C Harraman.

Director of Budget and Administrative Planning.—Joseph F. Gartland.

Chief Clerk and Director of Personnel.—Edgar B. Jackson.

Solicitor.—Frank J. Delany.

Chief Post Office Inspector.—James J. Doran.

Comptroller.—John J. Haggerty

DEPARTMENT OF THE NAVY

Secretary of the Navy.—James Forrestal.

Under Secretary of the Navy.—John L. Sullivan.

Assistant Secretary of the Navy.—W. John Kenney.

Assistant Secretary of the Navy for Air.—John Nicholas Brown.

Director of Budget and Reports.—Rear Admiral H. G. Hopwood.

Chief of Naval Operations.—Fleet Admiral Chester W. Nimitz.

Chief of Naval Personnel.—Vice Admiral Louis E. Denfeld.

Chief of the Bureau of Yards and Docks.—Rear Admiral John J. Manning.

Chief of the Bureau of Ordnance.—Rear Admiral G. F. Hussey.

Chief of the Bureau of Ships.—Vice Admiral Earle W. Mills.

Chief of the Bureau of Medicine and Surgery.—Rear Admiral Clifford A. Smanson, Surgeon General.

Chief of the Bureau of Aeronautics.—Rear Admiral Harold B. Sallada.

Judge Advocate General.—Rear Admiral O. S. Colclough.

Lend-Lease Liaison Office.—Admiral J. M. Reeves.

General Board.—Vice Admiral Frank J. Fletcher.

President of the Naval Retiring Board.—Capt. R. E. Hoyt.

Director of the Office of Naval Records and History.—Capt. J. B. Heffernan.

Director of the Office of Public Information.—Commodore E. M. Eller.

Chief of the Office of Naval Research.—Rear Admiral Paul F. Lee.

Headquarters Marine Corps.—General Alexander A. Vandegrift, Commandant.

DEPARTMENT OF THE INTERIOR

Secretary of the Interior.—Julius A. Krug.

Charged with pensions, public lands, Indian Affairs, geological surveys, reclamation of arid lands, and mines.

Under Secretary.—Oscar L. Chapman.

Assistant Secretaries.—Warner W. Gardner and C. Girard Davidson.

Special Assistants to the Secretary.—William H. McCrillis and Creekmore Fath.

Assistants to the Secretary.—Robert E. Day and Charles H. Alldredge.

Assistant to the Secretary in Charge of Land Utilization.—Lee Muck.

Budget Officer.—Vernon D. Northrop.

Chief Clerk.—Floyd E. Dotson.

Director of Information.—Carlton Skinner.

Solicitor.—Warner W. Gardner.

Bureau of Land Management.—Fred W. Johnson, Acting Director.

Fish and Wildlife Service.—Albert M. Day, Director.

Commissioner of Indian Affairs.—William A. Brophy.

Indian Arts and Crafts Board.—René d'Harnoncourt, Chairman.

Director of the Geological Survey.—William Embry Wrather.

Commissioner of Reclamation.—Michael W. Straus.

Director of the National Park Service.—Newton B. Drury.

Director of the Bureau of Mines.—R. R. Sayers.

Division of Territories and Island Possessions.—Edwin G. Arnold, Director.

Territorial Officials.—

Alaska—Ernest Gruening, Governor.

Hawaii—Ingram M. Stainback, Governor.

Virgin Islands—William Henry Hastie, Governor.

Puerto Rico—Jesús T. Piñero, Governor.

Puerto Rico Reconstruction Administration.—Edwin G. Arnold, Administrator.

The Alaska Railroad.—Col. John P. Johnson, General Manager.

Solid Fuels Administration for War.—Julius A. Krug, Administrator.

Division of Power.—Arthur E. Goldschmidt, Director.

National Power Policy Committee.—Julius A. Krug, Chairman.

DEPARTMENT OF AGRICULTURE

Secretary of Agriculture.—Clinton P. Anderson.

Under Secretary.—N. E. Dodd.

Assistant Secretary.—Charles F. Brannan.

Assistants to the Secretary.—William A. Minor, Joseph L. Orr, and E. J. Overby.

Director of Extension Work.—Milburn L. Wilson.

Agricultural Research Administration.—W. V. Lambert, Administrator.

Director of Personnel.—T. Roy Reid.

Director of Information.—Keith Himebaugh.

Director of Finance and Budget Officer.—W. A. Jump.

Office of Plant and Operations.—Arthur B. Thatcher, Chief.

Solicitor.—W. Carroll Hunter.

Librarian.—Ralph R. Shaw.

Office of Foreign Agricultural Relations.—Leslie A. Wheeler, Director.

Bureau of Animal Industry.—B. T. Simms, Chief.

Bureau of Dairy Industry.—O. E. Reed, Chief.

Bureau of Plant Industry, Soils and Agricultural Engineering.—R. M. Salter, Chief.

Production and Marketing Administration.—Jesse B. Gilmer, Acting Administrator.

Forest Service.—L. F. Watts, Chief.

Bureau of Agricultural and Industrial Chemistry.—L. B. Howard, Chief.

Bureau of Agricultural Economics.—O. V. Wells, Chief.

Bureau of Entomology and Plant Quarantine.—P. N. Annand, Chief.

Bureau of Human Nutrition and Home Economics.—Hazel K. Stiebeling, Chief.

Commodity Credit Corporation.—Jesse B. Gilmer, Acting President.

Soil Conservation Service.—H. H. Bennett, Chief.

Farm Credit Administration.—I. W. Duggan, Governor.

Federal Crop Insurance Corporation.—Gus Geissler, Manager.

Rural Electrification Administration.—Claude R. Wickard, Administrator.

DEPARTMENT OF COMMERCE

Secretary of Commerce.—W. Averell Harriman.

Under Secretary.—William C. Foster.

Assistant Secretary.—William A. M. Burden.

Assistant to the Secretary.—George M. Reynold.

Executive Assistant to the Secretary.—Bernard L. Gladieux.

Solicitor.—Adrian Fisher.

Director of the Office of Technical Services.—John C. Green.

Director of the Office of Information.—Bruce Catton.

Director of the Bureau of The Census.—James C. Capt.

Civil Aeronautics Administration.—Theodore P. Wright, Administrator.

Director of the Bureau of Foreign and Domestic Commerce.—Amos E. Taylor.

Director of the National Bureau of Standards.—E. U. Condon.

Director of the Coast and Geodetic Survey.—Rear Admiral L. O. Colbert.

Commissioner of Patents.—Casper W. Ooms.

Inland Waterways Corporation.—South Trimble, Jr., Chairman.

Weather Bureau.—Francis W. Reichelderfer, Chief.

National Inventors' Council.—Charles F. Kettering, Chairman.

Office of International Trade.—Arthur Paul, Director.

DEPARTMENT OF LABOR

Secretary of Labor.—Lewis B. Schwellenbach.

Charged with the duty of fostering, promoting, and developing the welfare of the wage earners of the United States and also working towards a solution of labor problems.

Administrative Assistant to the Secretary.—James E. Dempsey.

Under Secretary of Labor.—Keen Johnson.

Assistant Secretaries of Labor.—Philip Hannah and David A. Morse.

Special Assistants to the Secretary.—Kenneth C. Robertson and Louis Sherman.

Solicitor.—William S. Tyson, Acting.

Chief Clerk and Budget Officer.—James E. Dodson.

Director of Information.—Herbert Little.

Director of Conciliation.—Edgar L. Warren.

Director of Labor Standards.—Verne A. Zimmer.

Commissioner of Labor Statistics.—Ewan Clague.

Director of the Women's Bureau.—Frieda S. Miller.

Wage and Hour and Public Contracts Division.—L. Metcalfe Walling, Administrator.

Apprentice Training Service.—William F. Patterson, Director.

United States Employment Service.—Robert C. Goodwin, Director.

Retraining and Reemployment Administration.—Major Gen. Graves B. Erskine.

Wage Adjustment Board.—Arthur D. Hill, Jr., Chairman.

MISCELLANEOUS EXECUTIVE SERVICES

Civil Service Commission.—Harry B. Mitchell, President; Mrs. Frances Perkins, Arthur S. Flemming.

Interstate Commerce Commission.—George M. Barnard, Chairman; John L. Rogers, J. Haden Alldredge, Clyde B. Aitchison, William E. Lee, Charles D. Mahaffie, Walter M. W. Splawn, Carroll Miller, William J. Patterson, J. Monroe Johnson.

United States Atomic Energy Commission.—David E. Lilienthal, Chairman.

Civil Aeronautics Board.—James M. Landis, Chairman.

District of Columbia.—John Russell Young, President of the Board.

Federal Board of Hospitalization.—James E. Webb, Chairman.

Federal Reserve Board.—Marriner S. Eccles, Chairman; Ronald Ramson, Vice Chairman; M. S. Szymczak, James K. Vardaman, Jr., Ernest G. Draper, and Rudolph M. Evans.

Export-Import Bank of Washington.—William McC. Martin, Jr., Chairman.

Federal Trade Commission.—Garland S. Ferguson, Chairman; Ewin L. Davis, Lowell B. Mason, Robert E. Freer, William A. Ayres; Otis B. Johnson, Secretary.

United States Tariff Commission.—Oscar B. Ryder, Chairman; Lynn R. Edminster, Vice Chairman; Edgar B. Brossard, E. Dana Durand, George McGill, John P. Gregg; Sidney Morgan, Secretary.

National Housing Agency.—Wilson W. Wyatt, Administrator-Expediter.

Federal Housing Administration.

—Raymond M. Foley, Commissioner.

Federal Home Loan Bank Administration.—John H. Fahey, Commissioner.

Federal Public Housing Authority.—Dillon S. Myer, Commissioner.

Federal Power Commission.—Leland Olds, Chairman; Nelson Lee Smith, Vice Chairman; Claude L. Draper, Richard Sachse, Harrington Wimberly.

Federal Communications Commission.—Charles E. Denny, Jr., Acting Chairman.

Veterans' Administration.—General Omar N. Bradley, Administrator.

United States Maritime Commission.—Vice Admiral William W. Smith, Chairman.

Governor of the Panama Canal.—Major Gen. Joseph C. Mehaffey.

National Labor Relations Board.—Paul M. Herzog, Chairman.

National Advisory Committee for Aeronautics.—Dr. Jerome C. Hunsaker, Chairman.

The Commission of Fine Arts.—Gilmore D. Clarke, Chairman.

National Mediation Board.—Frank P. Douglass, Chairman.

National Capital Park and Planning Commission.—Gen. U. S. Grant 3rd, Chairman.

Smithsonian Institution.—Established 1846 under the terms of the will of James Smithson for the "increase and diffusion of knowledge among men." The former aim is accomplished by the promoting of original, scientific research, and the latter by publications and lectures. The affairs of the Institution are managed by a Board of Regents which cooperates with the Government and with National scientific bodies. Under the direction of the Institution are the National Museum, charged with preserving and utilizing objects of art and ethnological, geological, and mineralogical collections belonging to the United States; Bureau of American Ethnology, National Gallery of Art, Freer Gallery of Art, National Zoological Park, Astrophysical Observatory, and the Regional Bureau for the United States International Catalogue of Scientific Literatures. Secretary, Alexander Wetmore.

National Gallery of Art.—Samuel H. Kress, President; Huntington Cairns, Secretary-Treasurer.

National Academy of Sciences.—Frank B. Jewett, President; Luther P. Eisenhart, Vice President; Fred. E. Wright, Home Secretary; Detlev W. Bronk, Foreign Secretary.

Pan American Union.—Vacant.

Pan American Sanitary Bureau.—Surgeon Gen. Hugh S. Cumming, Director.

American National Red Cross.—Basil O'Connor, Chairman.

Permanent Joint Board on Defense.—F. H. La Guardia, Chairman.

Federal Loan Agency.—Charles B. Henderson, Acting Administrator.

Reconstruction Finance Corporation.—Charles B. Henderson, Chairman.

Securities and Exchange Commission.—James J. Caffrey, Chairman.

Tennessee Valley Authority.—Gordon R. Clapp, Chairman; Harcourt A. Morgan, James P. Pope.

Federal Deposit Insurance Corporation.—Maple T. Harl, Chairman.

Railroad Retirement Board.—William J. Kennedy, Chairman.

The National Archives.—Solon J. Buck, Archivist.

Federal Security Agency.—Watson B. Miller, Administrator.

- Social Security Board—Arthur J. Altmeyer, Chairman.
- Public Health Service—Thomas Parran, Surgeon General.
- U. S. Office of Education—John W. Studebaker, Commissioner.
- Office of Vocational Rehabilitation—Michael J. Shortley, Director.
- Food and Drug Administration—Paul B. Dunbar, Commissioner.

Federal Works Agency.—Major Gen. Philip B. Fleming, Administrator.

- Public Roads Administration—Thomas H. MacDonald, Commissioner.
- Public Buildings Administration—W. E. Reynolds, Commissioner.
- Federal Fire Council—W. E. Reynolds, Chairman.
- Bureau of Community Facilities—George H. Field, Commissioner.

III. THE NATIONAL GOVERNMENT

MEMBERS OF THE SENATE

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1947

Dates show beginning of service in the Senate. Names of Republicans are in Roman type; those of Democrats in *Italics;* American Labor in ROMAN CAPS; Progressive in SMALL CAPS.

ALABAMA
Lister Hill (1938)
John J. Sparkman (1947)

ARIZONA
Carl Hayden (1926)
Ernest W. McFarland (1940)

ARKANSAS
John L. McClellan (1942)
J. William Fulbright (1944)

CALIFORNIA
Sheridan Downey (1938)
William F. Knowland (1945)

COLORADO
Edwin C. Johnson (1936)
Eugene D. Millikin (1941)

CONNECTICUT
Brien McMahon (1944)
Raymond E. Baldwin (1947)

DELAWARE
C. Douglass Buck (1942)
John J. Williams (1947)

FLORIDA
Claude Pepper (1936)
Spessard L. Holland (1947)

GEORGIA
Walter F. George (1922)
Richard B. Russell (1933)

IDAHO
Glen H. Taylor (1944)
Henry C. Dworshak (1947)

ILLINOIS
Scott W. Lucas (1938)
C. Wayland Brooks (1940)

INDIANA
Homer E. Capehart (1944)
William E. Jenner (1947)

IOWA
George A. Wilson (1942)
Bourke B. Hickenlooper (1944)

KANSAS
Arthur Capper (1918)
Clyde M. Reed (1938)

KENTUCKY
Alben W. Barkley (1927)
John Sherman Cooper (1947)

LOUISIANA
John H. Overton (1932)
Allen J. Ellender (1936)

MAINE
Wallace H. White, Jr. (1930)
Owen Brewster (1940)

MARYLAND
Millard E. Tydings (1926)
Herbert R. O'Conor (1947)

MASSACHUSETTS
Leverett Saltonstall (1944)
Henry Cabot Lodge (1947)

MICHIGAN
Arthur H. Vandenberg (1928)
Homer Ferguson (1942)

MINNESOTA
Joseph H. Ball (1940)
Edward J. Thye (1947)

MISSISSIPPI
Theodore G. Bilbo (1934)
James O. Eastland (1941)

MISSOURI
Forrest C. Donnell (1944)
James P. Kem (1947)

MONTANA
James E. Murray (1934)
Zales N. Ecton (1947)

NEBRASKA
Hugh Butler (1941)
Kenneth S. Wherry (1942)

NEVADA
Patrick A. McCarran (1932)
George W. Malone (1947)

NEW HAMPSHIRE
Styles Bridges (1936)
Charles W. Tobey (1938)

NEW JERSEY
Albert W. Hawkes (1942)
H. Alexander Smith (1944)

NEW MEXICO
Carl A. Hatch (1934)
Dennis Chavez (1935)

NEW YORK
Robert F. Wagner (1927)
Irving M. Ives (1947)

NORTH CAROLINA
Clyde R. Hoey (1944)
William B. Umstead (1947)

NORTH DAKOTA
William Langer (1940)
Milton R. Young (1945)

OHIO
Robert A. Taft (1938)
John W. Bricker (1947)

OKLAHOMA
Elmer Thomas (1926)
E. H. Moore (1942)

OREGON
Guy Cordon (1944)
Wayne L. Morse (1944)

PENNSYLVANIA
Francis J. Myers (1944)
Edward Martin (1947)

RHODE ISLAND
Theodore F. Green (1936)
J. Howard McGrath (1947)

SOUTH CAROLINA
Burnet R. Maybank (1941)
Olin D. Johnston (1944)

SOUTH DAKOTA
Chan Gurney (1938)
Harlan J. Bushfield (1942)

TENNESSEE
Kenneth McKellar (1916)
Tom Stewart (1938)

TEXAS
Tom Connally (1928)
W. Lee O'Daniel (1941)

UTAH
Elbert D. Thomas (1932)
Arthur V. Watkins (1947)

VERMONT
George D. Aiken (1940)
Ralph E. Flanders (1947)

VIRGINIA
Harry F. Byrd (1933)
A. Willis Robertson (1946)

WASHINGTON
Warren G. Magnuson (1944)
Harry P. Cain (1947)

WEST VIRGINIA
Harley M. Kilgore (1940)
Chapman Revercomb (1942)

WISCONSIN
Alexander Wiley (1938)
Joseph R. McCarthy (1947)

WYOMING
Joseph C. O'Mahoney (1933)
Edward V. Robertson (1942)

MEMBERS OF THE HOUSE OF REPRESENTATIVES

COMPILED FROM THE CONGRESSIONAL DIRECTORY, YEAR, 1947

Dates show beginning of service in the House. Names of Republicans are in Roman type; those of Democrats in *Italics;* American Labor in ROMAN CAPS; Progressive in SMALL CAPS.

ALABAMA

1. *Frank W. Boykin* (1935)
2. *George M. Grant* (1938)
3. *George W. Andrews* (1944)
4. *Sam Hobbs* (1935)
5. *Albert Rains* (1944)
6. *Pete Jarman* (1936)
7. *Carter Manasco* (1941)
8. *Robert E. Jones, Jr.* (1947)
9. *Laurie C. Battle* (1947)

ARIZONA

At Large—*John R. Murdock* (1936)
Richard F. Harless (1943)

ARKANSAS

1. *E. C. Gathings* (1938)
2. *Wilbur D. Mills* (1938)
3. *James W. Trimble* (1944)
4. *Fadjo Cravens* (1939)
5. *Brooks Hays* (1943)
6. *W. F. Norrell* (1938)
7. *Oren Harris* (1940)

CALIFORNIA

1. *Clarence F. Lea* (1917)
2. *Clair Engle* (1944)
3. J. Leroy Johnson (1943)
4. *Franck R. Havenner* (1944)
5. Richard J. Welch (1925)
6. *George P. Miller* (1944)
7. John J. Allen, Jr. (1947)
8. Jack Z. Anderson (1938)
9. Bertrand W. Gearhart (1935)
10. *Alfred J. Elliott* (1937)
11. Ernest K. Bramblett (1947)
12. Richard M. Nixon (1947)
13. Norris Poulson (1947)
14. *Helen Gahagan Douglas* (1944)
15. Gordon L. McDonough (1944)
16. Donald L. Jackson (1947)
17. *Cecil R. King* (1943)
18. Willis W. Bradley (1947)
19. *Chet Holifield* (1943)
20. Carl Hinshaw (1943)
21. *Harry R. Sheppard* (1936)
22. John Phillips (1943)
23. Charles K. Fletcher (1947)

COLORADO

1. *John A. Carroll* (1947)
2. William S. Hill (1940)
3. J. Edgar Chenoweth (1940)
4. Robert F. Rockwell (1941)

CONNECTICUT

At Large—Antoni N. Sadlak (1947)

1. William J. Miller (1947)
2. Horace Seely-Brown, Jr. (1947)
3. Ellsworth B. Foote (1947)
4. John Davis Lodge (1947)
5. James T. Patterson (1947)

DELAWARE

At Large—J. Caleb Boggs (1947)

FLORIDA

1. *J. Hardin Petersen* (1933)
2. *Emory H. Price* (1943)
3. *Robert L. F. Sikes* (1940)
4. *George A. Smathers* (1947)
5. *Joe Hendricks* (1936)
6. *Dwight L. Rogers* (1944)

GEORGIA

1. *Prince H. Preston, Jr.* (1947)
2. *E. E. Cox* (1925)
3. *Stephen Pace* (1936)
4. *A. Sidney Camp* (1939)
5. *James C. Davis* (1947)
6. *Carl Vinson* (1914)
7. *Henderson Lanham* (1947)
8. *W. M. Wheeler* (1947)
9. *John S. Wood* (1944)
10. *Paul Brown* (1933)

IDAHO

1. Abe McGregor Goff (1947)
2. John Sanborn (1947)

ILLINOIS

At Large—William G. Stratton (1947)

1. *William L. Dawson* (1943)
2. Richard B. Vail (1947)
3. Fred E. Busbey (1947)
4. *Martin Gorski* (1943)
5. *Adolph J. Sabath* (1907)
6. *Thomas J. O'Brien* (1943)
7. Thomas L. Owens (1947)
8. *Thomas S. Gordon* (1943)
9. Robert J. Twyman (1947)
10. Ralph E. Church (1943)
11. Chauncey W. Reed (1935)
12. Noah M. Mason (1936)
13. Leo E. Allen (1933)
14. Anton J. Johnson (1938)
15. Robert B. Chiperfield (1938)
16. Everett M. Dirksen (1933)
17. Leslie C. Arends (1935)
18. Edward H. Jenison (1947)
19. Rolla C. McMillen (1944)
20. Sid Simpson (1943)
21. Evan Howell (1940)
22. *Melvin Price* (1944)
23. Charles W. Vursell (1943)
24. Roy Clippinger (1945)
25. C. W. (Runt) Bishop (1940)

INDIANA

1. *Ray J. Madden* (1943)
2. Charles A. Halleck (1935)
3. Robert A. Grant (1938)
4. George W. Gillie (1938)
5. Forest A. Harness (1938)
6. Noble J. Johnson (1938)
7. Gerald W. Landis (1938)
8. Edward A. Mitchell (1947)
9. Earl Wilson (1940)
10. Raymond S. Springer (1938)
11. *Louis Ludlow* (1929)

IOWA

1. Thomas E. Martin (1938)
2. H. O. Talle (1938)
3. John W. Gwynne (1935)
4. Karl M. Le Compte (1938)
5. Paul Cunningham (1940)
6. James I. Dolliver (1944)
7. Ben F. Jensen (1938)
8. Charles B. Hoeven (1943)

KANSAS

1. Albert M. Cole (1944)
2. Errett P. Scrivner (1943)
3. Herbert A. Meyer (1947)
4. Edward H. Rees (1936)
5. Clifford R. Hope (1926)
6. Wint Smith (1947)

KENTUCKY

1. *Noble J. Gregory* (1936)
2. *Earle C. Clements* (1944)
3. Thruston Ballard Morton (1947)
4. *Frank L. Chelf* (1944)
5. *Brent Spence* (1931)
6. *Virgil Chapman* (1931)
7. W. Howes Mead (1947)
8. *Joe B. Bates* (1938)
9. John M. Robsion (1935)

LOUISIANA

1. *F. Edward Hébert* (1940)
2. *Hale Boggs* (1947)
3. *James Domengeaux* (1940)
4. *Overton Brooks* (1936)
5. *Otto E. Passman* (1947)
6. *James H. Morrison* (1943)
7. *Henry D. Larcade, Jr.* (1943)
8. *A. Leonard Allen* (1936)

MAINE

1. Robert Hale (1943)
2. Margaret Chase Smith (1940)
3. Frank Fellows (1940)

MARYLAND

1. Edward T. Miller (1947)
2. *Hugh A. Meade* (1947)

3. *Thomas D'Alesandro, Jr.* (1938)
4. *George H. Fallon* (1944)
5. *Lansdale G. Sasscer* (1939)
6. J. Glenn Beall (1943)

MASSACHUSETTS

1. John W. Heselton (1944)
2. Charles R. Clason (1936)
3. *Philip J. Philbin* (1943)
4. *Harold D. Donohue* (1947)
5. Edith N. Rogers (1925)
6. George J. Bates (1936)
7. *Thomas J. Lane* (1943)
8. Angier L. Goodwin (1943)
9. Charles L. Gifford (1922)
10. Christian A. Herter (1943)
11. John F. Kennedy (1947)
12. *J. W. McCormack* (1928)
13. R. B. Wigglesworth (1928)
14. J. W. Martin, Jr. (1925)

MICHIGAN

1. *George G. Sadowski* (1943)
2. Earl C. Michener (1935)
3. Paul W. Shafer (1936)
4. Clare E. Hoffman (1935)
5. Bartel J. Jonkman (1940)
6. William W. Blackney (1938)
7. Jesse P. Wolcott (1931)
8. Fred L. Crawford (1935)
9. Albert J. Engel (1935)
10. Roy O. Woodruff (1921)
11. Fred Bradley (1938)
12. John B. Bennett (1947)
13. Howard A. Coffin (1947)
14. Harold F. Youngblood (1947)
15. *John D. Dingell* (1933)
16. *John Lesinski* (1933)
17. George A. Dondero (1933)

MINNESOTA

1. August H. Andresen (1935)
2. Joseph P. O'Hara (1940)
3. George MacKinnon (1947)
4. Edward J. Devitt (1947)
5. Walter H. Judd (1943)
6. Harold Knutson (1917)
7. H. Carl Andersen (1938)
8. *John A. Blatnik* (1947)
9. Harold C. Hagen (1943)

MISSISSIPPI

1. *John E. Rankin* (1921)
2. *Jamie L. Whitten* (1941)
3. *W. M. Whittington* (1925)
4. *Thomas G. Abernethy* (1943)
5. *Arthur Winstead* (1943)
6. *William M. Colmer* (1933)
7. *John Bell Williams* (1947)

MISSOURI

1. Wat Arnold (1943)
2. Max Schwabe (1943)
3. William C. Cole (1943)
4. *C. Jasper Bell* (1935)
5. Albert L. Reeves, Jr. (1947)
6. Marion T. Bennett (1944)
7. Dewey Short (1935)
8. Parke M. Banta (1947)
9. *Clarence Cannon* (1923)
10. *Orville Zimmerman* (1935)
11. Claude I. Bakewell (1947)
12. Walter C. Ploeser (1940)
13. *Frank M. Karsten* (1947)

MONTANA

1. *Mike Mansfield* (1943)
2. Wesley A. D'Ewart (1945)

NEBRASKA

1. Carl T. Curtis (1943)
2. Howard H. Buffett (1943)
3. Karl Stefan (1935)
4. A. L. Miller (1943)

NEVADA

At Large—Charles H. Russell (1947)

NEW HAMPSHIRE

1. Chester E. Merrow (1943)
2. Norris Cotton (1947)

NEW JERSEY

1. C. A. Wolverton (1926)
2. T. Millet Hand (1944)
3. James C. Auchincloss (1943)
4. Frank A. Mathews, Jr. (1946)
5. Charles A. Eaton (1925)
6. Clifford P. Case (1944)
7. J. Parnell Thomas (1936)
8. Gordon Canfield (1940)
9. Harry L. Towe (1943)
10. F. A. Hartley, Jr. (1929)
11. Frank L. Sundstrom (1943)
12. Robert W. Kean (1938)
13. *Mary T. Norton* (1925)
14. *Edward J. Hart* (1935)

NEW MEXICO

At Large—*Antonio M. Fernandez* (1943)
Georgia L. Lusk (1947)

NEW YORK

1. W. Kingsland Macy (1947)
2. Leonard W. Hall (1938)
3. Henry J. Latham (1944)
4. Gregory McMahon (1947)
5. Robert Tripp Ross (1947)
6. Robert Nodar, Jr. (1947)
7. *John J. Delaney* (1931)
8. *Joseph L. Pfeifer* (1935)
9. *Eugene J. Keogh* (1936)
10. *Andrew L. Somers* (1925)
11. *James J. Heffernan* (1940)
12. *John J. Rooney* (1944)
13. *Donald L. O'Toole* (1936)
14. *Leo F. Rayfiel* (1944)
15. *Emanuel Celler* (1923)
16. Ellsworth B. Buck (1944)
17. Frederic R. Coudert, Jr. (1947)
18. VITO MARCANTONIO (1938)
19. *Arthur G. Klein* (1947)
20. *Sol Bloom* (1923)
21. Jacob K. Javits (1947)
22. *Adam C. Powell, Jr.* (1944)
23. *Walter A. Lynch* (1940)
24. *Benjamin J. Rabin* (1944)
25. *Charles A. Buckley* (1935)
26. David M. Potts (1947)
27. Ralph W. Gwinn (1944)
28. Ralph A. Gamble (1937)
29. Katharine St. George (1947)
30. Jay LeFevre (1943)
31. Bernard W. (Pat) Kearney (1943)
32. *William T. Byrne* (1936)
33. Dean P. Taylor (1943)
34. Clarence E. Kilburn (1940)
35. Hadwen C. Fuller (1944)
36. R. Walter Riehlman (1947)
37. Edwin A. Hall (1939)
38. John Taber (1923)
39. W. Sterling Cole (1935)
40. Kenneth B. Keating (1947)
41. James W. Wadsworth (1933)
42. Walter G. Andrews (1931)
43. Edward J. Elsaesser (1944)
44. John C. Butler (1941)
45. Daniel A. Reed (1919)

NORTH CAROLINA

1. *Herbert C. Bonner* (1940)
2. *John H. Kerr* (1923)
3. *Graham A. Barden* (1935)
4. *Harold D. Cooley* (1935)
5. *John H. Folger* (1941)
6. *Carl T. Durham* (1938)
7. *J. Bayard Clark* (1929)
8. *Charles B. Deane* (1947)
9. *R. L. Doughton* (1911)
10. *Hamilton C. Jones* (1947)
11. *Alfred L. Bulwinkle* (1931)
12. *Monroe M. Redden* (1947)

NORTH DAKOTA

At Large—William Lemke (1943)
Charles R. Robertson (1944)

OHIO

At Large—George H. Bender (1938)

1. Charles H. Elston (1938)
2. William E. Hess (1938)
3. Raymond H. Burke (1947)
4. Robert F. Jones (1938)
5. Cliff Clevenger (1938)
6. Edward O. McCowen (1943)
7. Clarence J. Brown (1938)
8. Frederick C. Smith (1938)
9. Homer A. Ramey (1943)
10. T. A. Jenkins (1925)
11. Walter E. Brehm (1943)
12. John M. Vorys (1938)
13. Alvin F. Weichel (1943)
14. *Walter B. Huber* (1944)
15. P. W. Griffiths (1943)
16. Henderson H. Carson (1947)
17. J. Harry McGregor (1940)
18. Earl R. Lewis (1943)
19. *Michael J. Kirwan* (1936)
20. *Michael A. Feighan* (1943)
21. *Robert Crosser* (1923)
22. Frances P. Bolton (1940)

OKLAHOMA

1. George B. Schwabe (1944)
2. *William G. Stigler* (1944)
3. *Carl Albert* (1947)
4. *Glen D. Johnson* (1947)
5. *A. S. Mike Monroney* (1938)
6. *Toby Morris* (1947)
7. *Preston E. Peden* (1947)
8. Ross Rizley (1940)

OREGON

1. Walter Norblad (1946)
2. Lowell Stockman (1943)
3. Homer D. Angell (1938)
4. Harris Ellsworth (1943)

PENNSYLVANIA

1. James Gallagher (1947)
2. Robert N. McGarvey (1947)
3. Hardie Scott (1947)
4. Franklin J. Maloney (1947)
5. George W. Sarbacher (1947)
6. Hugh D. Scott, Jr. (1947)
7. E. Wallace Chadwick (1947)
8. Charles L. Gerlach (1938)
9. Paul B. Dague (1947)
10. *John W. Murphy* (1943)
11. Mitchell Jenkins (1947)
12. Ivor D. Fenton (1938)
13. Frederick A. Muhlenberg (1947)
14. Wilson D. Gillette (1941)
15. Robert F. Rich (1944)
16. Samuel K. McConnell, Jr. (1944)
17. Richard M. Simpson (1937)
18. John C. Kunkel (1938)
19. Leon H. Gavin (1943)
20. *Francis E. Walter* (1933)
21. Chester H. Gross (1943)
22. James E. Van Zandt (1947)
23. William J. Crow (1947)
24. *Thomas E. Morgan* (1944)
25. Louis E. Graham (1938)
26. Harve Tibbott (1938)
27. *Augustine B. Kelley* (1941)
28. Carroll D. Kearns (1947)
29. John McDowell (1947)
30. Robert J. Corbett (1944)
31. James G. Fulton (1944)
32. *Herman P. Eberharter* (1936)
33. *Frank Buchanan* (1946)

RHODE ISLAND

1. *Aime J. Forand* (1940)
2. *John E. Fogarty* (1940)

SOUTH CAROLINA

1. *L. Mendel Rivers* (1940)
2. *John J. Riley* (1944)
3. *W. J. Bryan Dorn* (1947)
4. *Joseph R. Bryson* (1938)
5. *James P. Richards* (1933)
6. *John L. McMillan* (1938)

SOUTH DAKOTA

1. Karl E. Mundt (1938)
2. Francis Case (1936)

TENNESEE

1. Dayton E. Phillips (1947)
2. John Jennings, Jr. (1940)
3. *Estes Kefauver* (1939)
4. *Albert Gore* (1938)
5. *Joe L. Evins* (1947)
6. *J. Percy Priest* (1940)
7. *Wirt Courtney* (1939)
8. *Tom Murray* (1943)
9. *Jere Cooper* (1929)
10. *Clifford Davis* (1940)

TEXAS

1. *Wright Patman* (1929)
2. *J. M. Combs* (1944)
3. *Lindley Beckworth* (1938)
4. *Sam Rayburn* (1913)
5. *J. Frank Wilson* (1947)
6. *Olin E. Teague* (1947)
7. *Tom Pickett* (1944)
8. *Albert Thomas* (1936)
9. *J. J. Mansfield* (1917)
10. *Lyndon B. Johnson* (1937)
11. *William R. Poage* (1936)
12. *Wingate H. Lucas* (1947)
13. *Ed Gossett* (1938)
14. *John E. Lyle* (1944)
15. *Milton H. West* (1933)
16. *R. Ewing Thomason* (1938)
17. *Omar Burleson* (1947)
18. *Eugene Worley* (1940)
19. *George H. Mahon* (1935)
20. *Paul J. Kilday* (1938)
21. *O. C. Fisher* (1943)

UTAH

1. *Walter K. Granger* (1943)
2. William A. Dawson (1947)

VERMONT

At Large—Charles A. Plumley (1935)

VIRGINIA

1. *Schuyler O. Bland* (1918)
2. *Porter Hardy, Jr.* (1947)
3. *J. Vaughan Gary* (1945)
4. *Patrick H. Drewry* (1920)
5. *Thomas B. Stanley* (1946)
6. *J. Lindsay Almond, Jr.* (1947)
7. *Burr P. Harrison* (1947)
8. *Howard W. Smith* (1931)
9. *John W. Flannagan, Jr.* (1931)

WASHINGTON

1. Homer R. Jones (1947)
2. *Henry M. Jackson* (1940)
3. Fred Norman (1947)
4. Hal Holmes (1943)
5. Walt F. Horan (1943)
6. Thor C. Tollefson (1947)

WEST VIRGINIA

1. Francis J. Love (1947)
2. Melvin C. Snyder (1947)
3. Edward G. Rohrbough (1947)
4. Hubert S. Ellis (1943)
5. *John Kee* (1933)
6. *E. H. Hedrick* (1944)

WISCONSIN

1. Lawrence H. Smith (1941)
2. Vacant
3. William H. Stevenson (1940)
4. John C. Brophy (1947)
5. Charles J. Kersten (1947)
6. Frank B. Keefe (1938)
7. Reid F. Murray (1938)
8. John W. Byrnes (1944)
9. MERLIN HULL (1935)
10. Alvin E. O'Konski (1943)

WYOMING

At Large—Frank A. Barrett (1943)

ALASKA

E. L. Bartlett (1944)

HAWAII

Joseph R. Farrington (1943)

PUERTO RICO

A. Fernós-Isern (1946)

FEDERAL JUDICIAL ORGANIZATION

By WILLIAM M. SCHUYLER
EDITOR, *The American Year Book*

SUPREME COURT OF THE UNITED STATES

Frederick M. Vinson (Kentucky), Chief Justice of the United States, appointed 1946.

Hugo L. Black (Alabama), appointed 1937.

Stanley F. Reed (Kentucky), appointed 1938.

Felix Frankfurter (Massachusetts), appointed 1939.

William Orville Douglas (Minnesota), appointed 1939.

Frank Murphy (Michigan), appointed 1940.

Robert H. Jackson (New York), appointed 1941.

Wiley Blount Rutledge, Jr. (Kentucky), appointed 1943.

Harold H. Burton (Ohio), appointed 1945.

Officers of the Supreme Court: Clerk—Charles Elmore Cropley.

Deputy Clerks—Reginald C. Dilli, Hugh W. Barr, Harold B. Willey.

Marshal—Thomas E. Waggaman.

Reporter—Walter Wyatt.

Librarian—Oscar D. Clarke.

UNITED STATES CIRCUIT COURT OF APPEALS

District of Columbia Judicial Circuit.—Mr. Chief Justice Vinson.

First Circuit.—Mr. Justice Frankfurter; Calvert Magruder (Massachusetts), John C. Mahoney (Rhode Island), Peter Woodbury (New Hampshire).

Second Circuit.—Mr. Justice Jackson; Learned Hand (New York), Thomas W. Swan (Connecticut), Augustus N. Hand (New York), Harrie Brigham Chase (Vermont), Charles E. Clark (Connecticut), Jerome N. Frank (New York).

Third Circuit.—Mr. Justice Burton; Albert Branson Maris (Pennsylvania), John Biggs, Jr. (Delaware), John J. O'Connell (Pennsylvania), Herbert F. Goodrich (Pennsylvania), Gerald McLaughlin (New Jersey), Harry E. Kalodner (Pennsylvania).

Fourth Circuit.—Mr. Chief Justice Vinson; John J. Parker (North Carolina), Morris A. Soper (Maryland), Armistead M. Dobie (Virginia).

Fifth Circuit.—Mr. Justice Black; Samuel H. Sibley (Georgia), Joseph C. Hutcheson, Jr. (Texas), Edwin R. Holmes (Louisiana), Leon McCord (Alabama), Curtis L. Waller (Florida), Elmo Pearce Lee (Louisiana).

Sixth Circuit.—Mr. Justice Reed; Xenophon Hicks (Tennessee), Charles C. Simons (Michigan), Florence E. Allen (Ohio), John D. Martin (Tennessee), Thomas F. McAllister (Michigan), Shackelford Miller, Jr.

Seventh Circuit.—Mr. Justice Murphy; Evan A. Evans (Wisconsin), William M. Sparks (Indiana), J. Earl Major (Illinois), Sherman Minton (Indiana), Otto Kerner (Illinois).

Eighth Circuit.—Mr. Justice Rutledge; Kimbrough Stone (Missouri), John B. Sanborn (Minnesota), Archibald K. Gardner (South Dakota), Joseph W. Woodrough (Nebraska), Seth Thomas (Iowa), Harvey M. Johnsen (Missouri), Walter G. Riddick (Arkansas).

Ninth Circuit.—Mr. Justice Douglas; Francis A. Garrecht (Washington), William Denman (California), Clifton Mathews (California), Albert Lee Stephens (California), William Healey (Idaho), Homer T. Bone (Washington), William E. Orr (California).

Tenth Circuit.—Mr. Justice Rutledge; Orie L. Phillips (Colorado), Sam G. Bratton (New Mexico), Walter A. Huxman (Kansas), Alfred P. Murrah (Oklahoma).

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Finis James Garrett (Tennessee), Presiding Judge, appointed 1929.

Oscar E. Bland (Indiana), appointed 1923.

Charles Sherrod Hatfield (Ohio), appointed 1923.

Joseph R. Jackson (Montana), appointed 1937.

Ambrose O'Connell (Iowa), appointed 1944.

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

D. Lawrence Groner, Chief Justice.
Harold M. Stephens.
Henry White Edgerton.
Bennett Champ Clark.
Wilbur K. Miller.
Elijah B. Prettyman.

UNITED STATES EMERGENCY COURT OF APPEALS

Albert Branson Maris, Chief Judge.
Calvert Magruder.
Walter C. Lindley.
Bolitha J. Laws.
Thomas F. McAllister.

COURT OF CLAIMS OF THE UNITED STATES

Richard S. Whaley (South Carolina), Chief Justice, appointed 1939.

Benjamin H. Littleton (Tennessee), ppointed 1929.

Samuel E. Whitaker (Tennessee), ppointed 1939.

Marvin Jones (Texas), appointed 940.

Joseph W. Madden (Illinois), appointed 1941.

DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA

Bolitha J. Laws, Chief Justice.
James M. Proctor.
F. Dickinson Letts.
Daniel W. O'Donoghue.
Jennings Bailey.
T. Alan Goldsborough.
James W. Morris.
Jesse C. Adkins.
David A. Pine.
Matthew F. McGuire.
Henry A. Schweinhaut.
Alexander Holtzoff.

UNITED STATES CUSTOMS COURT

Webster J. Oliver, Presiding Judge.
William J. Tilson.
Genevieve R. Cline.
David H. Kincheloe.
William J. Keefe.
William A. Ekwall.
William P. Cole.
Charles D. Lawrence.
Irvin C. Mollison.

TAX COURT OF THE UNITED STATES

Bolon B. Turner, Presiding Judge.
C. Rogers Arundell.
Ernest H. Van Fossan.
J. Edgar Murdock.
Eugene Black.
J. Russell Leech.
Arthur J. Mellott.
William W. Arnold.
John A. Tyson.
Samuel B. Hill.
Richard L. Disney.
Marion J. Harron.
John W. Kern.
Clarence V. Opper.
Byron B. Harlan.
Clarence P. LeMire.

UNITED STATES MARSHAL'S OFFICE

United States Marshal.—W. Bruce Matthews.

UNITED STATES ATTORNEY'S OFFICE

United States Attorney, District of Columbia.—Edward M. Curran.

Assistants.—Charles B. Murray, George E. McNeil, Cecil R. Heflin, Grace B. Stiles, John B. Diamond, Arthur J. McLaughlin, William Hitz, Stephen C. Miller, Sidney S. Sachs, John C. Conliff, Jr., John P. Burke, Sylvan Schwartz, Joseph F. Lawless, Helena D. Reed, John J. O'Leary, Daniel B. Maher, Andrew J. Howard, John D. Lane, William S. McKinley, Evan T. Davis, Brewster H. Marshall, Edward Molenof, John Lewis Smith.

CIVIL SERVICE IN THE UNITED STATES

By Harry B. Mitchell

President of the United States Civil Service Commission

RESUMPTION OF CIVIL SERVICE PROCEDURES

The national defense period for a year or two before the beginning of the war on Dec. 7, 1941 brought many thousand employees into the Federal service, a large proportion on a temporary basis. It became apparent that the resources of the entire nation in manpower and in agriculture and industry would be enlisted for the war's duration. This meant great expansion in the civilian activities of the Federal Government.

In order that the permanent positions after the war would be available for competition among the returning veterans and the war workers, the President in February 1942 directed the Civil Service Commission to promulgate regulations under which all civilian appointments would be limited to the duration of the war and six months thereafter. These regulations became effective March 16, 1942, for the service generally, with the exception of the field services of the postal establishment. They were extended to the postal field services on Oct. 23, 1943. More than 7,000,000 war service appointments were made during the war period through the placement activities of the Civil Service Commission.

Three things combined to warrant resumption of regular civil service procedures early in 1946: (1) end of hostilities; (2) rapid demobilization of the Army and Navy; and (3) great reduction in the number of civilian employees as pointed out under the heading Employment in the Executive Civil Service.

The President on Feb. 4, 1946 signed an Executive order directing the Civil Service Commission to resume regular civil service procedures as promptly as its resources would permit. Temporary Civil Service Regulations were issued, which were similar to the Civil Service Rules existing before the war, and were effective March 7, 1946.

The first examination held was that for stenographer and typist positions for which 266,548 applications were filed throughout the country. The number of eligibles secured was less than required, and the examination was reopened in October 1946 indefinitely. Other examinations announced cover the fields of chemistry, physics, patent examiner, engineering, budget and finance, forestry, library science, geology, drafting, dietetics, auditing and accounting, and the postal services.

BAN ON STRIKES BY FEDERAL EMPLOYEES

Congress enacted legislation which banned strikes by Federal employees. The employees are required to sign an affidavit that they are not members of an organization of government employees which asserts the right to strike against the Federal Government. Any employee who subsequently violates his affidavit is held to be guilty of a felony.

GOVERNMENT REORGANIZATION

There was approved on Dec. 20, 1945 the Reorganization Act of 1945. This gave the President authority for a two-year period to issue executive orders for reorganizing the executive branch of the Government. Three such plans have been presented to Congress, two of which became law.

Reorganization Plan No. 1 was disapproved. It provided among other things for the establishment of a permanent National Housing Agency, to which Congress took exception.

Plan No. 2 brought under the Federal Security Agency certain functions of the Children's Bureau of the Department of Labor, and functions of the Secretary of Commerce, Bureau of the Census, and Director of the Census with respect to vital statistics. The Social Security Board was abolished and its functions placed in the Federal Security Administrator. The United States Employees' Compensation Commission was abolished and its functions transferred to the Federal Security Agency.

Plan No. 3 provided for certain consolidations in the Treasury, Navy, Interior, Agricultural, and Commerce Departments, as well as other changes involving the National Labor Relations Board, Smithsonian Institution, and United States Employment Service.

PAY LEGISLATION

As in 1945, Congress passed two general pay bills, one for the postal services and the other for the services not subject to adjustment of pay by wage boards.

The postal pay bill (Public Law 386, 79th Congress, approved May 21, 1946), with a few exceptions, provided an increase of $400 per annum to postmasters, officers, and employees of the postal services; employees paid on an hourly or part-time basis receive additional compensation at the rate of 20¢ per hour; and fourth-class postmasters receive additional compensation at the rate of 20 per cent of their basic annual pay. The bill was made retroactive to Jan. 1, 1946.

The Federal Employees Pay Act of 1946 (Public Law 390, 79th Congress, approved May 24, 1946) provided pay increases to the groups of employees referred to specifically, including employees in the legislative, executive, and judicial branches. The general increase was 14 per cent or $250 per annum, whichever is the greater, except that no pay is to be increased by more than 25 per cent. The maximum annual salary was set at $10,000. The act was made effective July 1, 1946.

EMPLOYMENT IN THE EXECUTIVE CIVIL SERVICE

There has been steady reduction in the number of civilian employees in the Federal service in continental United States since the high point of 3,156,953 reached in June 1943. By September 1946 it was down to 2,154,000. Federal civilian employees outside continental United States had reached 854,000 in June 1945, and the number was down to 310,000 by September 1946. The total decrease in both categories from June 30, 1945 to Sept. 30, 1946 was 1,306,000. At the end of September the total number employed in the Washington, D. C. metropolitan area was 225,983, a drop of 63,000 from the high point recorded in 1943. There were 555,690 women employed full time at the end of September, 107.635 of them in the Washington metropolitan area. By September 1946 the percentage of veterans among the male employees had reached 51, the highest in the history of the Government, and the percentage was 38 for both men and women. The number of veterans employed was 825,100, as contrasted with 395,200 employed in July 1944. The accompanying table shows the number employed at the end of each fiscal year in two-year periods:

	June 30, 1938	June 30, 1940	June 30, 1942	June 30, 1944	June 30, 1946
Competitive classified positions...	562,909	726,827	*	*	**
Unclassified and exempt positions.	289,017	275,993	*	*	**
	851,926	1,002,820	2,207,754	2,918,287	2,299,007**

* Statistics showing the division between competitive classified positions and unclassified positions were not available under war service appointment procedure.

** In this number of positions approximately 1,289,000 employees had war service (temporary) appointments, approximately 71,000 employees were in unclassified or exempt positions, and approximately 940,000 employees had competitive classified status.

CIVIL SERVICE BY STATES

General.—During 1946 several state governments took action to bring pay rates of their employees in line with living costs. Among these states were California, Connecticut, Maryland, New York, Virginia, and Wisconsin.

Alabama. — The Mobile County Personnel Board limited to a period of five years following termination of the war, or five years after discharge of the veteran, whichever is later, a new veterans preference policy. This policy relates to entrance examinations but not to tests for promotion, and a passing grade is required before the veteran becomes eligible for preference. The preference is 10-points added to examination ratings for disabled veterans, wives of disabled veterans, and widows of veterans; and 5-points for other veterans.

Arizona.—Retirement systems have been approved for city employees of Tucson and Phoenix.

California. — Riverside voted to adopt the state retirement plan for all city employees. The California Supreme Court sustained the validity of allowing sick leave with pay to a state employee absent from work three days to care for his wife who was critically ill. Question had been raised whether sick leave could be granted for reasons other than actual illness of the employee. Lynwood voted to establish a personnel system covering city employees, and also adopted the California State retirement system. Certain elementary school employees in Compton were placed under a merit system effective July 1.

Georgia.—The Civil Service Board of Fulton County adopted a resolution to the effect that the beneficiary of any employee who dies while in the service will receive 15 days' pay plus all accrued vacation leave and compensatory time that the employee had to his credit.

Kentucky.—The legislature overrode a veto by the Governor and excluded from civil service coverage positions of chief and assistant chief of the Louisville police and fire departments, and withdrew from the city Board of Aldermen the power to make further extensions of the merit system by ordinance.

Louisiana.—Under revision of the civil service rules state employees who return to their jobs from military service will receive whatever pay increases they would have been entitled to if they had remained in their former positions. Another change permits employees to accumulate more than 60 working days of sick leave although no more than 60 days can be carried forward from one calendar year to the next.

Michigan.—By a 3-to-1 margin the voters in Hamtramck rejected a proposal to repeal the city's civil service law. Three members of the city council who led in an effort to repeal the law were defeated in seeking reelection. Kalamazoo adopted a new health insurance plan providing city employees with $1,000 life insurance for 60 cents a month. The city will pay the balance of premiums above the amount charged participants. The plan will not be effective unless 75 per cent of the city's employees participate.

Mississippi.—The mayor and commissioners of Jackson ordered the dismissal of a policeman who refused to resign from a labor union after being ordered to do so and warned that failure to obey would result in dismissal. The civil service commission affirmed the dismissal and ordered the city council to restore to service policemen if they applied within five days for reinstatement, coupled with a statement of renouncement of their union affiliation. On appeal the Supreme Court ruled that, in as much as the city council was elected by the people and made responsible to the people for proper conduct of every part of the city government, the police employees must be responsible to the council and must be under its direction, free from obligation of any allegiance whatsoever, so far as their activities as policemen are concerned. The dismissal was sustained.

Missouri.—Certain additional departments in the Missouri state service have been placed under the merit system by action of the state legislature. These departments are Public Health and Welfare, Corrections, and the Division of Employment Security of the Labor Department. The law also provides that employees who are now covered by the state merit system program shall come under the new system after it has been in operation for one year.

Nebraska.—The Omaha city charter was amended by vote to establish a separate civil service commission for the personnel of the city's police department. The city already has a civil service program covering the majority of municipal employees, but neither the police nor fire department was included.

New Jersey.—The veteran preference law was amended, requiring that the veteran standing highest on the list of eligibles must be appointed.

New York. — Following a suit brought by several non-veteran police officers of New York City, whose standings on promotional lists were lowered considerably when the new Veteran Preference Act was applied thereto, the New York Supreme Court upheld the application of the new veterans preference amendment to the state constitution in the case of promotional eligible lists established before the constitutional amendment became effective. A Labor Relations Bureau has been established in New York City as a part of the city government to aid in settling and avoiding strikes. This unit will also assist in handling relations between the city and its 150,000 employees, but city department heads will still be responsible for labor relations in their own administrative subdivisions.

Ohio.—The Supreme Court of the state reversed the decision of the lower courts which had agreed that the position of Director of Recreation for the City of Cincinnati could be listed in the unclassified service. It was held that the nature of the duties of the position did not bring the position expressly within the terms of the paragraph of the Ohio General Code which authorizes exemptions.

Oregon.—Both state and local government employees on July 1 became subject to the retirement system on a contributory basis.

Pennsylvania. — Honorably discharged veterans will be granted automatic salary increments in proportion to the time spent in the military service upon their return to the Pennsylvania state service.

Virginia.—The legislature passed a bill prohibiting reemployment for one year of public employees who leave their jobs on strike.

Wisconsin.—The state's municipal retirement system covers 42 cities, seven villages, 19 counties, eight school districts, and two metropolitan sewerage districts. The system was established in 1944. In Waukesha a profit-sharing plan was adopted, applying to the city's water department, under which employees of the department will receive a portion of the net profits resulting in operation of the utility. Four per cent of the utility's annual net earnings will be distributed among employees after operating expenses, taxes, and charges for depreciation have been met. The maximum bonus to a single employee is $200.

PERIODICAL PUBLICATIONS

Army and Navy Journal
1701 Connecticut Ave., N.W., Washington, D. C.
Congressional Digest
2131 LeRoy Place N.W., Washington, D. C.
Congressional Directory
U. S. Government Printing Office, Washington, D. C.
Congressional Record
U. S. Government Printing Office, Washington, D. C.
United States News
2201 M Street N.W., Washington, D. C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

Academy of Political Science, Fayerweather Hall, Columbia University, New York City.
American Academy of Political and Social Science, 3457 Walnut St., Philadelphia, Pa.
American Bar Assn., 1140 N. Dearborn St., Chicago, Ill.
American Historical Assn., Library of Congress Annex, Study Room 274, Washington, D. C.
American Political Science Assn., 105 Harris Hall, Northwestern University, Evanston, Ill.

Commercial Law League of America, 111 W. Monroe St., Chicago, Ill.

Honest Ballot Assn., Inc., 27 William St., New York City.

Institute of Public Administration, 684 Park Ave., New York City.

National Assn. of Legal Aid Organizations, 25 Exchange St., Rochester, N. Y.

National Civil Service League, 67 W. 44th St., New York City.

Town Hall Inc., The, 123 West 43rd St., New York City.

DIVISION IV

STATE GOVERNMENT

STATE ADMINISTRATION AND LEGISLATION

By Brevard E. Crihfield
Council of State Governments

GENERAL

Although 1946 was a so-called "off" year for state legislative sessions (most state legislatures meet biennially in odd-numbered years), a number of special sessions was called to consider emergency problems arising during the first post-war year. Thus a total of 25 states had their legislatures in session at one time or another during 1946, with some states holding two, three, and even four special sessions.

A major portion of the legislation enacted by the states in 1946 reflected the need for expanding services for returning veterans. College and university facilities were strained to the utmost to take care of the avalanche of veterans attending school under the G. I. Bill. Enrollments at state universities doubled in many cases and were vastly increased everywhere. Housing for veteran students and for veterans in general was a top-ranking problem for all levels of government—Federal, state, and local. Considerable pressure developed in several states for the payment of a state bonus to veterans. Many states took action to provide tax exemptions and other benefits and privileges for veterans, their dependents, and their organizations. State agencies to administer veterans' affairs, many of which had been set up during 1945, moved ahead with their programs aided by greatly increased operating budgets.

Missouri underwent during 1946 a rather comprehensive administrative reorganization of its state government as a result of changes authorized and required by a newly adopted constitution. Employment offices and unemployment compensation administration were of major importance, particularly in view of the Federal Government's returning to the states in November of 1946 the employment services which had been loaned by the states at the beginning of the war and operated on a national basis throughout the war. Tax and fiscal policy continued to be of general interest and concern to the states as pressure began to be applied for spending surpluses which had been accumulating during the war years. Public works and when to construct them were a major problem, with cost estimates skyrocketing far beyond the amounts previously appropriated to accomplish such projects. Federal legislation requiring state participation and cooperation was passed in the field of hospital surveys and construction, airport development, agricultural research, and school lunch programs, and the states began preparing to do their part of the job. Changes in the Federal Social Security Act also made it necessary for the states to review their own programs and legislation in this field.

STATE VETERANS AGENCIES

During 1946 state agencies administering veterans' affairs swung into full operation to meet the needs of the vast number of servicemen who were being demobilized. In every state there was an official agency charged with the duty and responsibility of coordinating various programs affecting veterans, and in addition, many state veteran agencies were carrying out direct programs to assist veterans through loans, welfare funds, bonuses advisory services, educational grants. and other benefits. Appropriations for such agencies ranged from a few thousand dollars in the smaller states to upwards of $1,000,000 in California Illinois, New York, Washington, and Wisconsin. On Nov. 13-15, 1946, the Retraining and Re-employment Administration of the Federal Government sponsored a conference of state directors of veterans' affairs held in Washington which was attended by delegates from 43 states. The purpose of the conferences was to promote closer cooperation between Federal and state agencies administering programs relating to veterans. An important result of this meeting was the formation of an organization to be known as The National Association of State Directors of Veterans' Affairs. Homer Bradney of the Illinois Veterans' Commission was selected to be the first chairman of the Association. The organization was formed to provide a medium for the exchange of ideas and information, to facilitate reciprocal state services, to foster a better understanding of national problems affecting veterans, to secure improved standards of service in all states, and to maintain and foster interest in the readjustment of the veteran and in veterans legislation.

STATE VETERANS PROGRAMS

A recent survey of state veterans programs as they were operating during 1946, shows that virtually all the states have well established programs of apprenticeship training for veterans, with as many as 18,000 veterans participating in some of the larger states. About two-thirds of the states give civil service employment preference to all veterans by law, such preference being most common with respect to appointment, retention, and reinstatement. About one-fourth of the states have special programs covering medical aid and hospitalization for veterans. All of the states are supervising and administering, in cooperation with the Federal Government, On-the-job Training Programs for veterans. About one-fourth of the states have programs which provide for the granting of various types of loans to veterans, such loans ranging from the small emergency type to those for the financing of farm and home purchases or the establishment of a business. Over half the states have enacted special tax legislation providing exemptions for veterans, and most of the states exempt veterans from various types of licensing requirements. Every state provides vocational rehabilitation for physically handicapped veterans. Special state relief and welfare programs for veterans are found in more than half of the states.

VETERANS EDUCATION

California appropriated $750,000 to be used during the current school year for direct educational assistance to veterans; up to $1,000 may be spent to further or complete the education of any individual veteran. California also took legislative action to provide correspondence instruction and apprenticeship training for veterans. Louisiana provided state aid for the education of children of deceased veterans. Maine appropriated $250,000 to provide emergency facilities at the state university, principally for the benefit of returning veterans. Massachusetts established a new college for veterans at Fort Devens, authorized communities to provide college courses for veterans, and made available free university extension courses for veterans. Michigan set aside $200,000 as an emergency loan fund to assist veteran students. New York established five institutions of applied arts and sciences, with an admission preference for veterans; liberalized the amount and increased the number of its state war service scholarships; and authorized its Commissioner of Education to contract for emergency instruction of veterans.

A great many states made emergency supplemental appropriations to their universities to provide expanded facilities to meet increased enrollments of veteran students.

VETERANS HOUSING

Most of the states made funds available for providing temporary housing at state universities, and others authorized bond issues for the construction of permanent dormitories. California appropriated $7,500,000 to aid communities in acquiring emergency housing facilities from the Federal Government for the benefit of veterans, with 90 per cent of the cost being borne by the state. Connecticut appropriated $5,000,000 for the same purpose, except that the state and the locality are to bear an equal share of the costs. Connecticut also set up a revolving fund to provide lumber from state forests to be used solely for veterans housing. Massachusetts passed an enabling act to permit local communities to take various emergency measures to provide shelter for veterans.

A number of states empowered their political subdivisions to participate in the Federal Government's program for providing emergency housing for veterans. New Jersey gave its department of economic development sweeping powers to acquire land, buildings, and other facilities for emergency housing, and appropriated $6,000,000 for this purpose. In November, 1946, the voters of New Jersey approved a bond issue of $35,000,000 to further implement this act with particular reference to housing for veterans. New York created a joint board for emergency housing of veterans and others, with broad powers to acquire and construct housing facilities. An emergency housing fund of $35,000,000 was appropriated from the post-war reconstruction fund to carry out the purposes of this act. Ohio appropriated $6,000,000 to its counties, allocated on a population basis, to provide temporary emergency housing for veterans. Numerous municipalities were granted specific authorization to go ahead with emergency housing programs.

VETERANS BONUS LEGISLATION

Early in 1946 Massachusetts supplemented its 1945 bonus measure by providing for payment of an additional $100 to veterans who had not served outside the United States, and an additional $200 to those who saw service in foreign countries or Alaska.

In September, 1946, the voters of Maine defeated on referendum a proposal to pay a state bonus of $150 to veterans of the Second World War. The referendum was on a $16,000,000 bond issue to be repaid by increased cigarette and liquor taxes and a special luxury tax.

In November, 1946, the voters of Illinois, Michigan, and Rhode Island approved bond issues for the payment of bonuses to veterans as follows: Illinois—a bond issue of $385,000,000 to pay a bonus of $10 per month of domestic service and $15 per month of foreign service, such bonds to be serviced by increased taxes on racing, cigarettes and if necessary by a general property tax; Michigan—a bond issue of $270,000,000 to pay bonus of $10 per month of domestic service and $15 per month of foreign service with the total bonus not exceeding $500, the method of financing being left to the legislature; Rhode Island—a bond issue of $20,000,000 to pay a flat bonus of $200 per veteran, no special tax action provided to repay bonds. During 1946, the New York legislature also took action on a bonus measure which would require bonds amounting to $400,000,000. If passed again at the 1947 session, this proposal will go to the electorate for approval in November, 1947.

VETERANS EMPLOYMENT

California, Kentucky, Louisiana, Minnesota, Massachusetts, Mississippi, New Jersey, New York, Ohio, and Virginia enacted measures further strengthening employment preference for veterans in the state civil service or granting re-employment rights to servicemen returning to state positions. Included in these enactments were increases in entrance examination credit for veterans, waiving of certain physical requirements for veterans in appointments in state positions, deletion of period of military duty in computing age if there are maximum age requirements for a position, and restoration to civil service lists after discharge for veterans who passed examinations prior to entering armed forces.

LICENSE AND TAX EXEMPTIONS FOR VETERANS

California, Kentucky, Louisiana, Massachusetts, Michigan, Mississippi, New Jersey, New York, Ohio, Virginia, and Wyoming passed laws to grant veterans various exemptions from taxes and licensing requirements. These included exemption from penalties and interest in connection with property taxes for individuals while in armed forces; increased exemption and extension of time of payment for veterans in paying state income tax; flat property tax exemption for disabled veterans; exemption from payment of poll taxes; automatic reinstatement of veterans who held licenses granted by state boards; exemption from examination for veterans otherwise qualifying for various state licenses; credit for army experience in qualifying for certain licenses, etc. In the November election, the voters of Louisiana approved a constitutional amendment providing a homestead exemption (until 1951) of $5,000 for veterans buying or building new homes, and the voters of Arizona approved an extension of the existing property tax exemption of $2,000 to veterans of the Second World War.

MISCELLANEOUS VETERANS LEGISLATION

The California legislature set up an integrated state department of veterans affairs in which were placed the various functions and programs relating to veterans which had previously been administered by a number of independent bureaus. Separate divisions of the newly organized department will handle farm and home purchases, educational assistance, and domiciliary care. In November the voters of California approved a $100,000,000 issue of veterans' aid bonds which will be used to finance home purchases of up to $7,500 and farm purchases of up to $13,500. The Massachusetts legislature adopted a resolution calling for a survey of post-war problems relating to economics, housing, and the need for a $50,000,000 loan fund for veterans.

Mississippi enacted a farm and home loan act to assist qualified veterans in buying a home or farm to cost not more than $5,000 where it can be shown that such veterans have been unable to obtain loans in their own community. The voters of Texas, in a special election held during November, 1946, approved a bond issue of $25,000,000 to finance the purchase of land which will be resold to veterans on easy terms. Several states took action to permit veterans under age 21 to obtain certain benefits under the G. I. Bill (thus removing so-called "minority disability").

STATE FINANCE AND TAXATION

During the fiscal year 1946, state tax collections reached an all-time high of approximately $6,000,000,000, thus continuing an uninterrupted upward trend which began in 1937. Total collections for the fiscal period ended in mid-1946 represented a 6.2 per cent increase over receipts for fiscal 1945, marked a 34.7 per cent gain over 1941 collections, and exceeded 1937 collections by 77.2 per cent.

Payroll, general sales, motor fuel, and income taxes accounted for 61.6 per cent of all 1946 state tax revenues. Payroll taxes alone accounted for 17.4 per cent of state tax receipts, totaling $1,030,000,000. Though the biggest single item in 1946 collections, this figure is still somewhat less than the previous year's $1,250,000,000 total. The decline is accounted for by reduction of overtime pay, shift of war-workers to lower-paid jobs, and the effect of strikes throughout industry. Motor fuel tax receipts, following termination of gasoline and tire rationing, surged upward to second place in nationwide state tax collections for 1946 with a $900,000,000 total, greatest since 1942's $942,000,000 all-time high. The 1946 total amounts to 15.1 per cent of the total state tax revenues for the year. Riding the crest of holiday consumer spending following V-J Day, general sales tax receipts for 1946 rose to $901,000,000 and accounted for 15.1 per cent of all state tax collections.

The greatest gain in a single tax category during the last five years was in revenues from individual and corporate income taxes, which rose from $523,000.000 in 1942 to $831,000,000 in fiscal 1946, representing a 14.1 per cent slice of the total state tax dollar. Individual income tax receipts continued upward, rising to $395,000,000 from 1945's $360.000,000. Corporate income taxes, meanwhile, sagged from $454,000,000 in 1945 to $436,000,000 in 1946, reflecting the drop in corporate profits following war production shutdowns. Revenue from motor vehicle license, alcoholic beverage, and tobacco taxes for fiscal 1946 was considerably above that for any preceding period of the past five years. Totals were $456.000,000, $400,000,000, and $199,000,000, respectively.

State tax legislation with the exception of financing for veterans' benefits was not especially significant in 1946. The number of states using sales, income, and tobacco taxes remained unchanged, and sales tax rates were also unchanged. The personal income tax in New York was reduced 50 per cent. and the permanent 4½ per cent corporate rate was reinstated. A novel tax was imposed by South Carolina on wholesalers and retailers of liquor. The law requires that they absorb the amount of the tax. Missouri enacted a new intangibles tax law. Missouri also established a new department of revenue in which were consolidated the tax administering functions formerly exercised by the auditor, treasurer, and other state agencies. This department was created pursuant to the new constitution in Missouri. Mississippi created an office of motor vehicle comptroller to take over the administration of the gasoline tax.

State legislatures during 1946 passed a total of 66 major bills regulating highway users, including an increase in the motor fuel tax rate in Virginia from five to six cents. Mississippi raised its tax on motor fuels other than gasoline from six to seven cents. New York extended a two-cent emergency gas tax. Seven states enacted major laws on registration fees, most of them concerning trailers and commercial carriers. Registration fees were reduced in Virginia and Mississippi. At the November election the voters of Texas approved a constitutional amendment prohibiting diversion of motor fuel revenues, thus becoming the 19th state to prohibit diversion of highway funds by constitutional provision.

Georgia and Kentucky revised registration fee schedules for commercial carriers, providing lower minimum charges. Missouri also revised its registration regulations. New Jersey, the only state to increase registration fees, decided to charge more for registration of commercial vehicles, trailers, semitrailers, and tractors.

PUBLIC WELFARE

During 1946 New York enacted the outstanding state legislation relating to public welfare. The measure, Chapter 200, gave legal authority to the State Department of Social Welfare and local welfare departments to proceed with optional plans for developing integrated public welfare services throughout the state. The first major objective of this legislation is the integration of services to the needy, including provision for a single office in which persons may apply for all types of public assistance and aid, the investigation of family needs by a single agency, and uniform standards of assistance and care within individual counties. A great degree of flexibility is permitted under this plan, and many options are available to the various political subdivisions although the basic pattern will be that of county plans of administration. Approval and annual review of local plans by the State Department are required.

A second and somewhat radical change abolishes the former cumbersome and costly "settlement" system in New York and substitutes a more easily administered residence requirement. Settlement laws governing the eligibility of applicants for public assistance date back for nearly 200 years and have caused hardship to the needy and made trouble for welfare officials. The third major feature of the legislation is the stabilization of state aid to local districts for support of welfare payments and administration. This fixes the local share of welfare costs at 20 per cent, the balance being absorbed by the state. The financing of public welfare, particularly during times of depression, has been a major problem in most local communities and this new reimbursement program is expected to lighten considerably the financial burden of local governments and permit sounder fiscal planning on their part. The concept of state-local cooperation in the field of public welfare embodied in this three-point program has attracted the attention of state officials throughout the country and may start a trend toward consideration of similar action in other states.

Missouri, as a result of its new Constitution, took action in 1946 to create a department of health and welfare which will combine within a single agency a number of previously independent boards and commissions. The department is to be headed by a director appointed by the Governor for a four-year term concurrent with his own term of office. There are three divisions of the department—health, mental care, and welfare—each headed by a director also appointed by the Governor. A merit system governing employment throughout the department is provided.

Kentucky passed enabling legislation to permit a city and county to create a joint board of public welfare which would consolidate and combine all welfare activities previously administered separately. Massachusetts revised its laws regulating aid-to-dependent children and laws relating to soldiers' relief. Mississippi authorized the establishment of additional local public welfare agencies in certain districts and empowered the State Welfare Department to administer and supervise all public child welfare services.

New Jersey enacted legislation to consolidate and coordinate municipal public assistance activities and to abolish the office of Overseer of the Poor. Ohio made a number of changes in its laws relating to old age assistance. South Carolina amended its laws so as to shorten the period of residence necessary for a person receiving old age assistance or aid to the blind. Virginia authorized its state welfare agency to fix standards and make regulations for the operation of homes for the aged and infirm and to assist in the establishment of a statewide system of such homes. Virginia also created a special legislative commission to study and investigate public assistance. A number of state legislatures adopted resolutions memorializing Congress to liberalize in various ways the existing Federal social security program.

California, Idaho, Kentucky, Massachusetts, Michigan, Mississippi, New Jersey, New York, Rhode Island, South Carolina, Virginia, and Wyoming enacted legislation affecting the public assistance programs, including assistance to the aged, the blind, the infirm, and dependent children. Many of these states paid particular attention to juvenile delinquency.

STATE LABOR LEGISLATION

In New Jersey a comprehensive law was enacted governing the industrial relations of public utilities, under which the State Board of Mediation is authorized to settle controversies concerning representation for collective bargaining purposes; the Governor is empowered to seize and operate any utility for the duration of a labor dispute. Laws restricting the action of labor unions and outlawing certain types of picketing were enacted by Louisiana and Virginia. At the November election, the voters of Arizona, Nebraska, and South Dakota gave substantial majorities to proposals to ban the closed shop, adopting language prohibiting the denial of employment to any person because of non-membership in a labor organization. Massachusetts voted, by a two-to-one margin, to approve a proposal to require that labor unions make public their financial reports.

Pursuant to its constitutional revision, Missouri established a new department of labor and industrial relations. The department is to be administered by a commission of three members, and several divisions are established to administer different types of labor laws. Massachusetts established a Fair Employment Practices Commission and forbade employment discrimination because of race, creed, etc., but the voters of California defeated a similar proposal in the November election. Alabama, California, Georgia, Kentucky, Massachusetts, New York, and Virginia enacted legislation affecting workmen's compensation, some of the legislative changes being of major importance.

New York passed two laws regulating the recruitment and housing of migratory workers. Massachusetts became the fourth state to extend minimum wage legislation to men. Rhode Island prohibited wage differentials based on sex for work of comparable character, and also set up an industrial code commission which is authorized to establish codes for the prevention of accidents and occupational diseases.

CHILD LABOR

California repealed its emergency war employment act which had given the Governor the power to relax standards with respect to employment of children. Georgia adopted a new child labor act which increased from 14 to 16 the minimum age for work at any time in mines, factories, laundries, etc., and which established a maximum 8-hour day, 40-hour week for children under 16 years. Kentucky increased the compulsory school term for children from 7 to 8 months. Louisiana made permanent a wartime relaxation permitting 12- and 13-year-old boys to deliver newspapers on fixed residential routes. Massachusetts enacted several laws dealing with child labor, including a new law limiting to 4 hours a day or 24 hours a week the work which may be performed on farms by children under 14 years of age. The Mississippi legislature provided for the creation of a commission to make studies of and recommendations for specific legislation pertaining to children, including amendments to present laws. In New Jersey a proposal to abolish the State Commission on Student Service was vetoed by the Governor. New York amended in several respects its labor laws with regard to employment of children. Virginia revised its child labor law pertaining to the delivery of newspapers by children of various ages.

MEDICAL—HOSPITALS

A trend toward more rigid licensing and regulation of the medical profession continued in 1946. Many bills were introduced regulating certain types of drugs such as hormones, hypnotics, and the barbiturates. Massachusetts, New York, and Virginia enacted legislation in this field. Pharmacy practice acts were strengthened in Kentucky, Massachusetts, and New York, and trades such as cosmetology and barbering came under stricter regulation in New York. Chiropractic regulatory acts were strengthened in Kentucky, Maryland, and South Carolina. Dental technicians were required to be registered in South Carolina. Psychologists, osteopaths, and midwives also came under regulation in a number of states.

Mississippi provided funds for the eradication and control of venereal diseases, and New York, Virginia, and Idaho provided additional care for those suffering from tuberculosis. A New Jersey act authorized the establishment of blood banks to collect and store blood and blood plasma, while Massachusetts authorized approved laboratories to examine blood donors or recipients of blood. Special studies of spastics and their problems and of the causes of infantile paralysis were authorized in New York and Massachusetts, respectively. Medical education was furthered in California by appropriations for the establishment of a medical school and center and for additions to existing facilities. A four-year medical school was authorized in Mississippi and an appropriation was made for a new board of medical education. Nutritional problems will be surveyed in New York by a joint legislative committee with broad powers.

California, Michigan, Mississippi, New York, South Carolina, and Virginia followed recommendations in the legislative program of the Council of State Governments by authorizing hospital surveys and by providing for the acceptance by the state of Federal funds when available for such hospital inventories and construction costs. Special health commissions or medical care surveys were authorized in Massachusetts, Mississippi, New York, and Rhode Island. California appropriated funds for the licensing and inspection of public and private hospitals, while Georgia, Massachusetts, Mississippi, and Virginia adopted a number of bills requiring the inspection and regulation of hospitals and nursing homes. In some instances the bills amended existing statutes.

California, Massachusetts, Michigan, and Virginia recognized the increasing problem resulting from mental diseases and provided additional facilities for the treatment of the feeble-minded and those affected with nervous and mental diseases. Louisiana enacted a mental health act to provide for the study and treatment of such diseases. Hospital care and medical service plans were authorized or broadened in Kentucky, Mississippi, New York, South Carolina, and West Virginia. In New York medical service plans may provide for dental expense indemnity.

EMPLOYMENT SERVICES

On Nov. 16, 1946, the employment services were returned to state operation after almost five years of operation as a Federal agency (United States Employment Service). Shortly after Pearl Harbor, the system of public employment offices was nationalized by executive order of President Roosevelt, on the ground that it could function better during the war period on a nationwide basis. The Governors of the 48 states agreed to the transfer as an emergency measure but with the understanding that the employment services would return to their respective states at the end of the war. President Truman wanted the agency to continue on a national basis at least until mid-1947, certain other groups wanted the system on a permanent basis, but Congress wanted it returned to the states promptly. During 1945 and 1946 the states had been engaged in a strenuous effort to secure the return of their employment offices at the earliest possible moment. November, 1946, was a compromise date.

In order to insure that this service would be rendered in an adequate manner and that the transfer of these services from Federal to state control would be handled smoothly and expeditiously, the Council of State Governments held many conferences with state and Federal officials. Four regional meetings, covering all of the states, were held during August and September, 1946—immediately following passage of the bill returning the employment service to the states—with the result that the employment service is now under state control and state operation, integrated with the state unemployment compensation activities so as to provide a comprehensive employment security program in each state.

UNEMPLOYMENT COMPENSATION

The year 1946 saw state unemployment compensation systems take in stride the unemployment burden attendant upon reconversion, despite earlier predictions from several quarters that the states would be unable to handle this problem. During 1944-45, the Council of State Governments had developed and promoted a specific program for improving, expanding and perfecting unemployment compensation. This program was adopted so extensively by the states during 1945 that the *Social Security Bulletin,* official publication of the Federal Security Agency, declared that "the improvements which have been made in the program are impressive." As a result, Congress was convinced that Federal action to supersede or supplement state provisions was not necessary, and several bills introduced to accomplish that end were defeated in the 79th Congress.

During 1946, the financial condition of the state unemployment insurance systems remained excellent, and although benefit payments exceeded current income from payroll taxes, nevertheless, the balance at the end of the 1946 fiscal year still closely approached $7,000,000,000. With respect to state unemployment compensation legislation during 1946, California took action to provide disability benefits as a supplement to its unemployment insurance act, thus making it the second state to make such benefits available (Rhode Island being the other).

Kentucky and Missouri amended their laws to provide for reorganization of their unemployment compensation agencies. Louisiana extended its coverage to include maritime workers. Rhode Island, California, Louisiana, Michigan, Virginia, New York, and Missouri made changes in the financing provisions of their unemployment compensation laws. Massachusetts increased its maximum weekly benefit amount from $21 to $25; Missouri increased the amount from $18 to $20. Virginia increased its minimum weekly benefit amount; Missouri increased the duration of benefits; and Massachusetts provided an additional benefit for dependent children. New York provided for payment of benefits to veterans who are disqualified solely because unemployment is owing to a work stoppage caused by a labor dispute.

AVIATION

At the November election, the voters of Michigan approved a constitutional amendment permitting the state to expend funds for constructing airports, and to assist localities by monetary grants for such construction. Massachusetts and Wyoming enacted measures requiring that Federal grants for the construction of public airports be channeled through established state aviation agencies and that such projects be approved by the state agencies. Kentucky and Virginia passed measures affecting their state aviation agencies. California, Michigan, New York, South Carolina, and Virginia passed bills dealing with airports and air navigation facilities. Georgia and Kentucky enacted legislation relating to airport zoning. Virtually all of the states holding legislative sessions during 1946 enacted miscellaneous measures affecting some phase of aviation development or regulation.

STATE SALARY ADJUSTMENTS

During 1946 a number of states made wage and salary adjustments for their employees, some of which were on a tentative basis relating to changes in the cost of living. In California the state personnel board made a war emergency salary adjustment part of the permanent salary structure, approved an additional salary increase, and created a staff to review and adjust individual classifications. In Colorado, the state civil service commission recommended salary increases ranging from 6 to 18 per cent for classified employees, such action subject to legislative approval in January, 1947. Connecticut authorized an increase based on a sliding scale to give lower salaried employees the most benefit. Indiana approved salary increases ranging from about 5 to 18 per cent.

The Maine legislature in special session approved a cost-of-living increase for a six-month period and will reconsider this matter at the regular 1947 session. In Maryland general salary increases ranging from $320 to $500 per year were authorized by administrative action. New York put into effect a five-step plan of increases ranging from 14 to 30 per cent, this action being temporary pending the outcome of a wage study being conducted by a research staff. Virginia discontinued its temporary war adjustments and in lieu thereof established a salary plan based on an increase of 24 per cent on the first $1,200 of salary with descending percentage increases on additional salary. Wisconsin put into effect a $10 per month increase on a temporary basis pending action by the 1947 legislature.

MISCELLANEOUS LEGISLATION

California enacted legislation providing that in the future the legislature shall meet in annual rather than biennial sessions. In even-numbered years the legislature will consider only the budget and urgent matters requiring legislative attention. In the odd-numbered years the legislature will consider matters usually taken up at a regular legislative session. On the other hand the voters of Connecticut defeated a proposal for annual sessions of the legislature.

Virginia adopted a subdivision control law for counties, cities, and towns, authorizing the control of subdivisions adjacent to municipal limits, permitting joint control by two cities or by a city and county, and enabling localities to adopt the provisions of the law by ordinance.

At the November election voters in four states approved tax measures increasing state aid to local schools. These were California, Michigan, Oregon, and Utah, and the resultant increase in state school aid is expected to total at least $80,000,000 annually. In addition, Maryland, New York, Ohio, South Carolina, and West Virginia completed studies having the twin objectives of meeting educational needs and providing a guide for long-range expansion and improvement of higher education.

In the field of municipal finance, several states took action to assist political subdivisions. New York put into effect the so-called "Moore Plan," designed to bring about a more stable and equitable method of state assistance to municipalities for their general governmental purposes. Under this plan the old system of shared taxes will be abolished, and instead moneys will be distributed to municipalities on the basis of their respective populations. Michigan voters approved a constitutional amendment which provides for the refunding to cities and schools of one cent of the state's three-cent sales tax. This is expected to provide approximately $60,000,000 per year to be divided equally by local schools and cities. California enacted a measure which provides for the distribution of $90,000,000 to various political subdivisions of the state. Arizona provided that henceforth the cities of that state shall receive a share of all gasoline taxes collected by the state.

NATIONAL AND INTERSTATE RELATIONS OF THE STATES

By Frederick L. Zimmermann
New York Joint Legislative Committee on Interstate Cooperation

GENERAL

Basic to any discussion of national and interstate relations of the states is a recognition of recent trends with respect to the eternal question of determining the relative roles of the national and state spheres of government in American federalism. These underlying trends have been outlined at some length by this article in previous years. It will suffice to review them briefly here.

As has been pointed out, the United States Supreme Court has tended to retreat from its traditional role as the umpire of the Federal system. The trend of judicial interpretation has been toward the elimination of any broad constitutional check upon the extension of the functions of the National Government. At the same time, the Court seems to be broadening the sphere of state action within the constitutional framework of the American Federal system by refraining from imposing narrow constitutional limitations upon such action. As a result, Congress has increasingly become the forum for the determination of the relative role of the nation and the states in the American Union. The states, accordingly, have tended to turn to the Congress to present their case, utilizing for that purpose the Council of State Governments and the associated Governors' Conference.

The Council of State Governments, a joint organization of the state governments completely supported by them, is itself emblematic of the more effective organization of state governments during recent years to counter the growth of centralization. Not only has the Council come to be regarded as the spokesman for those governments at Washington but it has been notably effective in that role. The position of the states with respect to Federal-state relations has been in general to emphasize the building of cooperative government in the federalism as against the tendency toward centralization and, to that end, to seek the fashioning of a cooperative pattern as between all levels of government and the channeling of the administration of new programs through the extant machinery of government. As a means for securing more effective Federal-state relations the Council has been gradually developing new and more institutionalized channels of Federal-state cooperation as evidenced by the machinery embodied in the Committee of State Drafting Officials and the Federal-State Relations Section of the U. S. Department of Justice.

RETURN OF EMPLOYMENT SERVICE TO THE STATES

Some of the notable struggles in the last Congress revolved around Federal-state issues. Outstanding were the question with respect to the return of the employment service to the states, the issue as to whether the Federal or state governments owned submerged coastal lands (the "tidewater" controversy), and the battle, with the state governments on one side and the city governments on the other, over national airport legislation. With the possible exception of the airport legislation, it would appear that the states were generally successful in securing the support of Congress in these controversies.

The return of the employment services to the states, effective Nov. 15, 1946, marked a real triumph for the state governments after long efforts toward that objective. To review the story in outline, on Dec. 18, 1941, President Roosevelt requested the transfer of the state employment offices to the Federal Government as a wartime measure. The states acquiesced in this request but with the understanding that, at the close of the war emergency, the employment services offices would be returned to the states to be operated as before under state administration through a Federal-state cooperative pattern. From time to time, the states, through the Governors' Conference and the Council, reiterated their expectation that the employment services would ultimately be returned to them.

In the meantime, there had developed considerable agitation for retention of the employment services by the Federal Government principally on the grounds that unemployment was a national problem and that the employment services would therefore be best administered on a national basis. On their side, the advocates of state administration argued that, while the problem is national, employment occurs at the local level. Moreover, they pointed to the need for integrating the employment services with unemployment insurance which is administered by the states. With the termination of hostilities with Japan, the executive committee of the Governors' Conference met with President Truman to discuss the question. While the President agreed in principle as to the ultimate return of the services to the states, he was against immediate return and in a subsequent message to Congress opposed such return earlier than June 1947. When Congress, late in 1945, attached a rider to an appropriation bill providing for the return of the employment service facilities to the states within 100 days, the bill was "pocket vetoed" by the President. However, in the 1946 session of Congress, efforts for such action were renewed, and legislation to that effect finally prevailed. With the return of the employment services to the states, the Council of State Governments called four regional meetings covering all the states in order to facilitate a smooth transition from Federal to state operation and to assist in the development of improved standards and procedures in the administration of the employment service. This is in accordance with the Council's position that, if the states are to maintain their role, they must meet their responsibilities effectively.

The return of the employment services emphasizes the already apparent victory of the states with respect to the underlying issue as to whether unemployment compensation is ultimately to be administered through the present Federal-state cooperative pattern or by the Federal Government directly. Moreover, the recommendations of the Council of State Governments, that the states strengthen their provisions for such unemployment insurance, has been generally heeded. It is significant that almost all the state legislatures meeting in 1945 and 1946 expanded their employment security programs to meet the needs of the time. It is clearly evident that, for the foreseeable future, employment security will continue to be administered through the states.

MARITIME SERVICES IN EMPLOYMENT COVERAGE

The decision of the Congress in the field of unemployment compensation was underlined by Congressional action during 1946 that insured coverage of maritime services in the extant system of unemployment coverage under state administration rather than through a separate Federal unemployment insurance system for seamen. Certainly, if there is any aspect of unemployment insurance for which an argument can be made for direct Federal administration on the basis of past practice in our constitutional system, it is maritime coverage. Yet, state coverage for maritime workers was made certain on a permanent basis when Congress in the Social Security Amendments of 1946 brought employers of seamen under the three per cent Federal unemployment tax and authorized state legislatures to enact state unemployment taxes on such maritime employers which may be credited against the Federal tax.

Federally financed benefit payments to seamen who were employed by the War Shipping Administration may also be handled by the states under authorization to the Federal Security Administrator to enter into agreements with the states for this purpose. The final element in swaying the Congress in this matter, after a struggle of more than three years, seems to have been the success of the states through the Interstate Conference of Employment Security Agencies in formulating interstate reciprocal arrangements with respect to jurisdiction.

The Interstate Maritime Reciprocal Arrangement, which covers not only offshore operations but also operations on inland waterways if they are not connected with those on the Great Lakes, has been accepted by Alabama, Alaska, California, Florida, Louisiana, Maryland, Nebraska, New Jersey, New York, Pennsylvania, Texas, Virginia, and Washington. The Interstate Great Lakes Reciprocal Arrangement extends only to maritime service "which is performed on the Great Lakes or inland waterways connected therewith" and has been accepted by Illinois, Indiana, New York, Ohio, and Wisconsin. The allocation of maritime services for tax purposes under these arrangements is in full accord with the specific provisions added to the Federal Unemployment Tax Act in 1946 since they provide for coverage of services on vessels in that state where the employer maintains the operating office from which the operations of the given vessel are "ordinarily and regularly supervised, managed, directed and controlled."

SUBMERGED COASTAL LANDS

The states were not as successful as regards the controversy over submerged coastal lands. In brief, this dispute arose when Federal officials, after many years of seeming recognition of state ownership of such lands rather suddenly asserted Federal title despite a long line of Supreme Court decisions which, as the states see them at least, have upheld state title to these lands. Federal officials reply that none of these cases rested on the specific issue of ownership. On the practical side, the states point out that, relying on these decisions, the state governments and their local subdivisions have spent large sums in reclaiming or improving these lands that such lands granted them to private owners and improved by those owners have been a great source of taxable wealth, that the states have leased these lands for shrimp and oyster fisheries and for the extraction of sand, gravel, and minerals, particularly oil, to the benefit of state revenues and that the claims of the Federal Government would revolutionize this situation to the point of confusion. While the Federal Government brought suit against the State of California to obtain a judicial determination of this matter, the battle was carried to Congress where it was enlivened by a welter of charges and counter charges, usually in relation to the oil industry. In 1946, Congress enacted legislation designed to give the states clear title to such land from the highwater mark to a line three miles at sea. The President vetoed the legislation on the grounds that the matter was before the Court for determination and the legislation failed of passage over his veto. Indications are, however, that the struggle will be continued in the 80th Congress.

GRANTS-IN-AID FOR AIRPORTS

The states, on the face of things seemingly suffered a major setback with respect to national legislation for grants-in-aid for airports. As has been pointed out in previous issues of this article, the question involved here was a fundamental one from the point of view of the states, namely, whether the administrative system for the airports should be based upon the pattern of Federal-state cooperation which has hitherto been customary with the grants-in-aid channeled through the state governments or whether the Federal Government would deal directly with the local governments. The Federal Airport Act as finally approved May 13, 1946 authorizes the Administrator of the Civil Aeronautics Administration to prepare a national plan for the development of airports in the United States, authorizes the appropriation of $3,000,000 for preliminary surveys and planning, authorizes the appropriation of $500,000,000 over a period of seven fiscal years to be matched by state and local governments, for the construction of airports; and permits the Civil Aeronautics Administration to deal directly with any political subdivision in the United States without reference to the states in the development and construction of airports.

The Council of State Governments, the Governors' Conference, and the National Association of Attorneys General opposed the bill on the ground that the measure, in bypassing the states, would lead to inefficient administration of the airport program. The long and bitter struggle over the bill extending over a year and a half finally resulted in the inclusion of an amendment to the measure as finally passed which reads as follows: "Nothing in this Act shall authorize the submission of a project application by any municipality or other public agency which is subject to the law of any State if the submission of such project application by such municipality or other public agency is prohibited by the law of such state." In other words, if the states wish the national airport system developed in accordance with state plans and state programs and their local subdivisions to operate through state agencies rather than directly with Federal bureaus, the states can enact legislation to that end.

As might be imagined, the 1946 Governors' Conference urged the enactment of state legislation specifically requiring that Federal grants-in-aid for airport construction be expended in the states only upon receiving the approval of the state aviation agencies. A number of states have already amended their aviation laws requiring their political subdivisions to operate through regularly constituted state aviation agencies and also requiring that Federal grants-in-aid for the construction of airports shall be channeled through the state governments. The Council of State Governments is recommending the enactment of legislation of this character by the 1947 state legislatures. So that, while the Federal Airport Act deviated from the traditional intergovernmental pattern in permitting direct relations between the Federal and local levels of government with respect to Federal grants-in-aid, the amendment cited above may make possible ultimate state victory on the airport issue.

FEDERAL GRANT-IN-AID LEGISLATION FOR HOSPITALS

The 1946 session of Congress was notable with respect to Federal grant-in-aid legislation. Three new grant-in-aid systems were established. Besides grants-in-aid for airports, the Congress also initiated new grants-in-aid for the planning and construction of hospitals and for school lunches. In addition, Congress expanded the extant grant-in-aid systems with respect to agricultural research, vocational education, and social security. The so-called Hill-Burton Act provides for Federal cooperation through grants-in-aid to the states in health and hospital surveys and in the construction of hospitals throughout the country. The act authorizes the appropriation of $3,000,000 to aid the states in surveying the need for construction of hospitals and the development of programs for the construction of "such public and other non-profit hospitals as will, in conjunction with existing facilities, afford facilities for furnishing adequate hospital, clinic and similar services to all people" and authorizes the appropriation of $75,000,000 a year for five years for the construction of public and other non-profit hospitals.

In order to participate in this program the states must establish the necessary machinery, including the designation of a single state agency as the sole agency for the administration of the plan, the formulation of a hospital construction program setting forth the relative need for the several projects contained within such program, and the provision of methods of administration, including those relating to the establishment and maintenance of personnel standards on a merit basis, and must enact legislation by July 1, 1948 providing that compliance with minimum standards of maintenance and operation shall be required in the case of hospitals which shall have received Federal aid under the act. If a state fails to act in this matter by the stipulated date it shall not be entitled to any further allotments.

NATIONAL SCHOOL LUNCH ACT

In the National School Lunch Act Congress authorizes "such sums as may be necessary" to aid in supporting school lunch programs in public and non-profit private schools of high school grade and below. The Secretary of Agriculture shall apportion among the states not less than 75 per cent of the yearly appropriation on the basis of the number of school children between 5 and 17 years in the state and the need for assistance as indicated by the relation between per capita income of the state and that of the United States. In states, where the constitutions prohibit the reallocation of funds to non-profit private schools, the Secretary of Agriculture is permitted to allot funds directly. Federal funds are to be matched from 1947 to 1950 by state and local funds on a dollar-for-dollar basis, but the matching increases progressively as follows: 1951 to 1955, one and a half state dollars to one Federal dollar; 1956 and thereafter, three state dollars to one Federal dollar. When a state maintains separate schools for minority races, "a just and equitable distribution" of funds for their benefit must be made.

GRANTS FOR AGRICULTURAL AND SOCIAL AID

In addition to these new grants, Congress expanded activities, made more money available, and added new functions with respect to agricultural research. Particular emphasis was placed on the expansion of marketing research. The amounts of grants-in-aid for vocational education were also increased while the Social Security Amendments of 1946 raised the ceilings for Federal matching with respect to the three categories of grants-in-aid, old age assistance, aid to dependent children, and aid to the blind. The maximum amount subject to Federal matching for old-age assistance and aid to the blind was increased from $40 to $45. Of the first $15 of such expenditures, the Federal Government would pay two-thirds. Of the remaining expenditures not exceeding $45, the Federal Government would pay one-half. The Federal Government would also pay an amount equal to one-half of the total sums expended and found necessary by the Administrator for the proper and efficient administration of the state plan.

The maximum amount subject to Federal matching for aid to dependent children was increased from $18 for the first child in a family and $12 for each additional child to $24 and $15 respectively. Of the first $9 of such expenditures, the Federal Government would pay two-thirds. Of the remaining expenditures not exceeding the maximum subject to Federal matching, the Federal Government would pay one-half.

One effect of this change is to provide bonus Social Security payments to all states alike of $5 a month for each aged and blind person and $3 for each dependent child. The increase in amount subject to Federal matching will also provide additional funds for those states making assistance payments up to the new maximums. Several states are amending their public assistance plans to increase the allowed state maximum on individual payments up to the new ceilings now subject to Federal matching.

The increase in ceilings on payments to which Federal matching would apply in social security caused a demand in Congress for variable grants that would permit the Federal Government to carry a larger share of the burden in the poorer states. After a struggle in Congress the principle of variable grants in social security was defeated. The hospital and school lunch legislation, on the other hand, tends to recognize the variable grants principle.

INSURANCE REGULATION

The action of Congress in placing a requirement for state action in the airports legislation emphasizes the use of a similar device in connection with the insurance legislation of 1945 where Congress granted a moratorium on the operation of the Sherman Act, the Clayton Act, the Federal Trade Commission Act, and the Robinson-Patman Anti-discrimination Act until Jan. 1, 1948 and provided that, after that date, those laws were to be applicable to the business of insurance to the extent that such business is not regulated by state law. Similar requirements for state action, if Federal action is to be withheld, have appeared in other proposals before the Congress, notably with respect to proposals for Federal legislation on pollution abatement and forest regulation. It seems possible that this device requiring state action as an alternative to potential Federal action may become a familiar one in the pattern of national-state cooperation in the American Federal system.

The forthcoming year should prove important to the determination of the degree to which the states obviate the need for the application of Federal laws in the field of insurance, since 1947 is a state legislative year, and few state legislatures meet in 1948. The National Association of State Insurance Commissions after months of study and investigation of existing state laws have prepared a group of model rate regulatory bills. The Council of State Governments committee on insurance has recommended that the states examine their existing laws, and in those states where inadequate or insufficient regulation of rates obtain, these model regulatory bills be considered for adoption.

PUBLIC WORKS

During the war years, in accordance with the recommendations of the Council of State Governments, the states through state agencies, designated for the purpose explored their public work needs and developed extensive public work programs which they planned to put into effect at the end of the war. Because of the scarcity of construction materials, together with the greatly increased cost of proposed public works and because the expected unemployment crisis failed to develop, many of the states have postponed the construction of public work projects except where the need is immediate and urgent. It will be remembered that Congress had authorized $500,000,000 for highways through grants-in-aid in each of the first three post-war fiscal years. In spite of handicaps, the states had made excellent progress in preparing plans for major projects to be financed with these funds. Plans were completed for highways to cost $624,000,000, and work was under way on plans for projects to cost $2,500,000,000. In view of conditions, actual construction and highways contracted for fell far short of the progress that had been contemplated when Congress authorized the increased amounts involved. On the other hand, the Federal Works Agency reported that "state and local plans for public works construction so far completed have failed to reach a volume sufficient to help stabilize the construction industry for even one year in the event of an unemployment emergency." Congress has made no provision for continuing assistance to state and local plan preparation groups after June 30, 1947.

VETERANS

With respect to veteran affairs, the Council reports that state programs have been developed through legislative and administrative action and that every state has in operation an agency concerned with veterans' affairs. However, the Board of Managers of the Council of State Governments, meeting in December 1946, criticized the waste of public funds through the overlapping of responsibilities in the administration of veterans' services by state and Federal bureaus.

FLOOD CONTROL AND KINDRED MATTERS

It will be remembered that state pressure in Congress secured amendments to the 1944 Federal Flood Control Act and the 1945 Federal Rivers and Harbors Act designed to secure recognition of state interests. The cooperative Federal-state policy established under these laws provides that Federal investigations or reports for navigation, flood control, irrigation, and related purposes "shall be conducted in such a manner as to give to the affected state or states, during the course of the investigations, information developed by the investigations and also opportunity for consultation regarding plans and proposals, and . . . opportunity to cooperate in the investigations. The relations . . . with any state . . . shall be with the Governor of the state or such official or agency of the state as the Governor may designate."

To secure coordination among the various Federal agencies dealing with water resources problems, an inter-agency committee was established in the National Government. During the year, the Water Resources Committee of the Council of State Governments explored the desirability and possibility of formalizing the central inter-agency committee in Washington and devising ways and means for a closer coordination between such a committee and the states. Increasingly, Federal-state agencies to review plans and programs and to coordinate the activities of existing Federal and state agencies are being promoted in various water regions. Federal-state inter-agency committees have been established in the Missouri and Columbia river basins, and others are contemplated. Illustrating the increasing tempo of state activities as regards water resources a series of regional conferences was held during 1946 in the various interstate drainage areas, including conferences with respect to New England, the Colorado and Columbia basins, the Delaware, Potomac, and New York harbor areas, the Savannah River, the Missouri River, and the coordination of the activities of Illinois and Indiana in controlling and developing their interstate water resources. A number of conferences have been held on the controversial problems of the Missouri River, including all the intergovernmental agencies concerned, the Missouri River States Committee comprised of the Governors of the basin states, the Missouri River Inter-Agency Committee, which is composed of representatives of the various Federal agencies, and four of the Governors selected by the States Committee and the Council of State Governments. As a result of these conferences, the Council was requested to work with Iowa, Nebraska, Kansas, and Missouri in devising a suggested plan to facilitate construction of flood control projects on the lower Missouri River and accordingly has developed a suggested legislative program which will be submitted to the legislatures of these states at their forthcoming regular sessions.

TAXATION OF AIRLINES

In 1947, the states will endeavor, by joint state legislative action, to clear up the question of multiple taxation in the field of air carriers. In the Northwest Airlines case, the Supreme Court's decision had the effect of permitting such multiple taxation of airlines. However, in that decision the Court clearly indicated that Congress has the power by means of legislation to prevent multiple or unduly burdensome taxation of interstate air commerce. Federal legislation was promptly introduced to achieve this end by setting up a formula for the allocation of such taxes, but the states have taken action through the Council of State Governments to achieve the same goal through common legislative action. Under the proposed state measure each state can tax air carriers by a personal property tax, a tax on gross receipts or net income or on capital stock. But while each state may adopt the method of taxing air carriers, which it deems most appropriate in view of its existing tax structure, the allocation formula will be the same regardless of which method of taxation a state adopts. That formula is the state's portion of arrivals and departures, revenue tons handled, and originating revenue, with each of these factors receiving equal weight. Failure of the states to act in this matter will undoubtedly lead to Congressional action.

STATE INTEREST IN INTERNATIONAL ORGANIZATION

The growing pattern of international organization may well affect the position of the states in the Federal system. Under judicial interpretation of the United States Constitution, when the National Government makes a treaty with a foreign power it can enact legislation to carry out that treaty without regard to the normal constitutional division of powers between the nation and the states, and is limited only by a specific constitutional prohibition. From the practical point of view, the machinery of the state governments may be extremely helpful in aiding in the administration of such international arrangements although, under our constitutional system, the states can not be compelled to enforce Federal statutes or treaties. That the states may, therefore, be interested in projects of international organization, which affect their functions, is indicated by the proposed Great Lakes Fisheries Treaty, the opposition of the Interstate Oil Compact Commission to the proposed Anglo-American oil treaty. and the action of the Exploratory Intercoastal Conference of the three coastal groups of states in 1946 in requesting that the states should be consulted with respect to international fisheries treaties and represented on any international agency established for the regulation of fisheries in which a state or a group of states are concerned.

FINANCIAL POSITION OF THE STATES

As has been pointed out in previous issues, the position of the states in the Federal system was not weakened but probably was strengthened during the war period. The states at the close of the war were in the strongest financial position they have attained during the past half century. This was owing in some part to the wartime tax and fiscal program developed in 1941 by the Council of State Governments. This program emphasized the maintenance of tax rates to enable the states to build resources, the payment of debts, and the conservation of state surpluses for post-war needs. Almost all the states adopted such a program in whole or part. As a consequence, the total debt of the states as a group at the close of the war had been reduced more than 25 per cent, while state and local governments had accumulated over $5,000,000,000 in surplus funds. According to the Bureau of Census figures, the nationwide total of state tax collections for the fiscal year 1946 scored an all-time high and continued the steady upward trend which began in 1937.

During the past year, the Tax Committee of the Council of State Governments issued a report and recommendations on Post-war State Taxation and Finance. The report warns that there is strong possibility of a decline in revenue because of business uncertainty and post-war adjustments at a time when it will be necessary to increase the expenditures of state governments to meet the need for deferred maintenance and new construction and because of rising costs and needs generally. In many states additional state money for aid to local government is being requested, while the state legislatures in session in 1946 experienced terrific pressure on surpluses and general war and post-war fund balances. The Committee states: "The favorable picture revealed by present general and special fund balances is not complete unless these adverse factors are also considered."

The Committee recommends a state program, which includes, among other things, retention of the anti-inflationary war policies until the present inflationary pressures are eased, and the preparation of a long-range program for the financing of the state government with maintenance of high tax rates in periods of business activity and lower tax rates during periods of recession and low income. The interstate program of the committee embodies the adoption by the states of reciprocal uniform legislation for the allocation of tax bases of interstate taxpayers in the following fields: determination of domicile of taxpayers and decedents, allocation of income arising from interstate transactions or arising out of the taxpayer's state of domicile, apportionment of property of interstate firms, especially railroads and other utilities, and allocation formulas for the taxation of interstate airlines. On the Federal-state level, the committee recommends the mutual abandonment of competing fields of taxation so far as this is feasible and requests that the Federal Government adopt certain legislative measures to assist the states. These include: development of a clear and consistent policy for Federal grants to the states, elimination of rigid dollar for dollar matching, and requirements for earmarking of state funds; development of a consistent policy for payments of taxes or payments in lieu of taxes to state and local governments for certain types of Federal property located within their jurisdiction; and the modernization of Federal estate and gift taxes and extension of a substantial credit against the whole Federal estate and gift tax for similar taxes paid to the states.

FEDERAL-STATE RELATIONS

The relationship between the national government and the states has always been and will continue to be one of the major problems of American government. During 1947, the Council of State Governments will explore the possibilities of improvement in the field of Federal-state relations. It is planned to give emphasis to three phases; first, Federal grants-in-aid; second, the further development of the new machinery for Federal-state cooperation, particularly the possibility of expanding the Drafting Committee of State Officials; and, third, intergovernmental fiscal relationships.

The grant-in-aid system since its inception during the last century has steadily grown until it has become one of the principal media of Federal-state relations and now covers at least nine major services of government and involves the expenditure of billions of dollars, but it has developed in accordance with no over-all plan. Each grant-in-aid program has developed in response to public pressures but without relation to other grants-in-aid and in particular with no consideration for programs which have not been stimulated by such grants. An over-all appraisal of the grant-in-aid system is overdue. A more balanced and better integrated system of grants-in-aid would be of major consequence to the future of national state relations and to the Federal system itself.

CHANNELS OF NATIONAL-STATE COOPERATION

One of the notable accomplishments of the defense and war periods in the cooperation between the national and state governments was the establishment of a channel of communication between the two levels of government to implement cooperative action. Machinery of this character had long been needed. In 1940, the Council of State Governments established a Drafting Committee of State Officials to appraise state laws in the light of defense needs and to coordinate state legislation with Federal programs. In time, the Section on Federal-State Relations of the United States Department of Justice was established to coordinate the suggestions for state legislation of agencies of the Government and to channel these proposals to the Drafting Committee of State Officials. As a result there have been developed periodically programs of Suggested State Legislation which were recommended for state enactment by the Council of State Governments. The channel developed for an emergency seems to have become a permanent one.

The Drafting Committee has prepared a comprehensive program for the consideration of the 44 state legislatures meeting in 1947, which has been presented at a series of four regional conferences of state legislators and other public officials held throughout the country during November and December, 1946. Aviation and hospital legislation are featured. The State Channeling of Federal Airports Act would require that participation by political subdivisions of the state in the development of a national system of public airports be in accordance with state plans and state programs. All project applications to the Civil Aeronautics Administration for Federal grants of funds would be approved by state aviation agencies and Federal funds would be channeled through such state agencies.

The State Hospital Survey and Construction Act is designed to assist states in the preparation of legislation which will enable them to take full advantage of the Federal act and meet its requirements. The State School Lunch Act is submitted for states which do not now have legislation enabling them to accept Federal grants-in-aid for this purpose.

Many of the other proposals were outlined in the 1945 article, but there are three new measures which should be mentioned—the Uniform State Insecticide, Fungicide and Rodenticide Act, which seeks uniformity of state laws in the prevention of the distribution of adulterated or misbranded products of this character; the act for the Control of Pullorum Disease of Domestic Poultry to bring about uniformity of laws dealing with the control of this disease; and the act authorizing the Purchase of Obligations Issued or Guaranteed by the International Bank which permits all fiduciary investors, but notably insurance companies and banks, to invest in obligations of the International Bank for Reconstruction and Development.

Mention should be made, in connection with the development of channels between the national and state levels of government, of the arrangement between the Council of State Governments and the Congressional Library under which the Council forwards all bills introduced in state legislatures to the Library and also reports periodically on enactments.

DEVELOPMENT OF INTERSTATE COOPERATION

It seems clearly evident that the progress which is being made towards a new and more closely integrated pattern of intergovernmental relationships in the United States has received a major impetus from the existence and activities of the Council of State Governments. This machinery of interstate cooperation, as established by the parent American Legislators Association in 1935, has as its basic units the state Commissions on Interstate Cooperation, the official negotiating agencies of their respective governments in National-state and interstate relations. Generally, these bodies follow the pattern originally envisaged in that their membership includes representatives of both houses of the legislature and of the executive branch in order to secure integration within the state government in its negotiations with other governments.

Limited at first principally to the states of the Northeast, the use of such agencies spread gradually to other states, until in 1946, 46 states had established cooperation commissions. Idaho and North Dakota, the two remaining states, are cooperating with the Council through the medium of committees appointed by their governors. In recent years, the Council has tended more and more to work through the governors and the Governors' Conference, one of the older agencies for interstate cooperation. The Council also has a working arrangement with the long-established National Conference of Commissioners on Uniform State Laws, with the result that there has been a marked rise in state enactments of the recommendations of that organization. The Council also recently agreed to act as the secretariat of the new association of state budget officers.

Recently, new organizations devoted to intergovernmental cooperation have appeared. One of these is the unofficial Council on Intergovernmental Relations which is working through groups of interested citizens. This organization has sought the participation of the local, state, and Federal governments in the experiment which is now being carried on in four counties, one each in Minnesota, Indiana, Georgia, and California. Another recent contribution to organized cooperation as among the various levels of American government has been the work of the Pacific Coast Board of Intergovernmental Relations which has demonstrated its usefulness as a forum for exchange of information and ideas among the governors, mayors, Federal administrators, and other public officials of the region.

INTERSTATE WATER COMPACTS

While Congressional action with respect to interstate compacts during 1946 was limited to the approval of an interstate compact between Colorado and New Mexico with respect to the waters of Costillo Creek and authorization to Utah, Idaho, and Wyoming to negotiate and enter into a compact for the division of the waters of the Bear River and its tributaries, there were notable developments on the state level with respect to the negotiation and formulation of new compacts and the implementation of old ones. There was a strong movement in the New England area for the formulation of an interstate compact with respect to water resources in that region, while in the Colorado basin the state governments were considering a compact for the Upper Basin to supplement the well known Colorado River Compact. In essence, in the Colorado River Compact, the Colorado River Basin states agreed on a general allocation of water between the Upper Basin and the Lower Basin states. The Bureau of Reclamation has now recommended that, before any plan of comprehensive development can be effectuated, there must be an apportionment of water to the individual states of the basin. The Upper Basin states in 1946 initiated negotiation for a compact to apportion among those states the 7,500,000 acre-feet of water apportioned in perpetuity to the upper Colorado River Basin by the Colorado River Compact. There is also involved the determination of responsibility of the Upper Basin states, in accordance with the Colorado River Compact to make deliveries of water to Mexico under the recently ratified United States-Mexico water treaty. The Colorado River Compact, as ratified in 1928, recognized this international responsibility.

Virginia failed to ratify the long delayed Ohio River Basin Compact in the 1946 session of her legislature. Only ratification by Virginia is now necessary to put that long-delayed compact into effect. There are indications that Virginia will ratify in 1948, the next year in which the legislature meets.

INTERSTATE OIL COMPACT

The Interstate Oil Compact, which established the Interstate Oil Compact Commission, will come before Congress in 1947 for an extension of the life of the agreement. Seventeen oil and gas producing states, representing approximately 90 per cent of the gas and 80 per cent of the oil production of the United States, are members of the compact commission. The governors of Indiana and Tennessee have announced they will recommend to their 1947 legislatures that those states ratify the compact. There are also indications that membership is being considered by California, Wyoming, and Mississippi. Consent by Congress to the further extension of the life of this compact seems a foregone conclusion.

INTERSTATE PAROLEE COMPACT

It seems certain that Missouri will become the 40th state to ratify the Interstate Parolee Compact, which has been ratified by the largest number of states of any compact in the history of the Union. Missouri has enacted the enabling legislation and only executive action by the governor ratifying the compact is necessary to participation. The Interstate Compact for the Supervision of Parolees and Probationers was drafted and signed in September of 1937 by 25 states. Fourteen additional states have since become signatory, and only Georgia, Kentucky, Mississippi, Missouri, Nevada, North Carolina, South Carolina, South Dakota and Texas are, at present, non-participants. As was pointed out in 1945, there have been interesting developments with respect to this compact in the formation of an Interstate Compact Administrators Association to improve the operation of the compact. This Association will be headed by a council of five members which constitutes a standing committee on rules and regulations. This group is to be the clearing house for all matters that may arise under the rules and regulations and the adapted forms, and will act as the instrumentality for the interpretation of those rules. An interesting situation with respect to exchange of ratifications was cleared up by the Association when photostatic copies of all ratifications were sent to each participating state to remedy some omissions caused by states having become members at varying times over the last decade.

INTERSTATE FISHERIES

The Pacific Coast states and the Gulf Coast states will be considering during 1947 and 1948 the adoption of interstate compacts on those coasts for the establishment of interstate marine fishery commissions similar to that established by compact among the Atlantic Coast states. The proposed compact for the Gulf Coast states in its present draft includes a significant innovation in that it provides for membership by foreign states or component units of foreign federal systems in the proposed Commission if Congress gives its specific consent to such an arrangement.

Fisheries have proven one of the most fertile fields for the development of interstate organization. The developments in this field during 1946 are especially noteworthy. Under the auspices of the Atlantic States Marine Fisheries Commission and the Council of State Governments, an Exploratory Intercoastal Fisheries Conference was held in May 1946 for the discussion of common problems, particularly on the state-national-international level. For the first time, the states of all three coasts, Atlantic, Gulf, and Pacific, were drawn into a common endeavor. As a result of the conference impetus was given to the movement for interstate fisheries compacts on the Pacific and Gulf Coasts.

The states also took a common stand in requesting that the states be consulted in the negotiating stage and represented in the administrative stage with respect to international fishery treaties which affected the states. The proclamation of President Truman in 1945, directed to foreign nations, in which the United States asserted its right to establish conservation zones with respect to fisheries contiguous to American coasts but beyond the three-mile limit, was discussed particularly with respect to the problems it raised as to the relative Federal and state jurisdiction. The Conference recommended that the state governments consider a similar assertion of jurisdiction but that in so doing they refrain from discriminating against the fishing vessels of other states. In addition to these significant decisions the Conference established an Intercoastal Committee of three representatives from each coast to act as a liaison agency on these matters.

During the year, the members of the Atlantic States Marine Fisheries Commission from Virginia and Maryland recommended the amendment of the historic Potomac compact of 1785 to provide for the establishment of an interstate commission to manage and regulate the common oyster fisheries of that river. Delaware and New Jersey similarly are seeking to improve the operation of the old Delaware Bay fisheries compact between those two states.

President Truman on April 22, 1946 transmitted the long awaited Great Lakes Fisheries Treaty to the United States Senate. The treaty is notable in that it was initiated originally by the Great Lakes states and because the governments of those states were consulted during its negotiation. The treaty establishes the International Commission for the Great Lakes Fisheries with three American and three Canadian members and authorizes this body to regulate the fisheries of the lakes. The treaty breaks new ground in that one of the Canadian members will represent the Province of Ontario and one of the American members will represent the Great Lakes states and will be appointed by the President from a "list of two or more persons named by the states having jurisdiction on the Great Lakes." Licensing and administration on the American side will be carried on, in the first instance, by the states and on the Canadian side by the Province of Ontario. This is a new departure in treaties in American treaty annals.

STATE CONSTITUTIONS, INITIATIVES, AND REFERENDA

By Edwin O. Stene
Associate Professor, University of Kansas

GENERAL

The electorates of 36 states exercised their powers of direct democracy in 1946 by passing on 157 questions, including 127 constitutional amendments, seven proposed bond issues, 21 legislative acts, and two official opinion polls. Louisiana, with 31 proposed amendments, led in the number of questions submitted. California ranked second with 17 questions on the ballot, while Alabama and Oregon each had nine.

State legislatures submitted 117 constitutional amendments, of which 80 were approved and 37 rejected. Of the other ten measures submitted by the legislatures, all except two were approved. Initiated petitions met with more favorable verdicts than usual. Ten constitutional amendments were proposed by petition, and nine were adopted. Six initiated bills were adopted and seven rejected. On referred bills, the petitioners were sustained in three instances, whereas two legislative acts were upheld.

GOVERNORSHIP SUCCESSION

The executive branch of government received somewhat less attention than in the wartime election years. Yet questions regarding succession to the governorship and executive salaries were voted upon in several states. Connecticut completed the adoption of an amendment, approved in several towns in 1945, whereby the lieutenant governor-elect will succeed to the governorship in case of death, resignation, or disqualification of the governor-elect. Oregon, where there is no lieutenant governor, placed the presiding officers of the senate and house of representatives ahead of the secretary of state in the line of succession, and California added three elective officers to the line of possible succession.

EXECUTIVE SALARIES

The legislature of South Dakota, after repeated and unsuccessful attempts to raise the meager salaries fixed in the constitution for executive officers, finally won authority to prescribe salaries by legislative act. Arkansas adopted a new schedule of executive salaries, and California laid the basis for executive salary increases by establishing constitutional floors instead of ceilings.

ADMINISTRATIVE BOARDS

The trend so evident in the war years, toward establishing constitutional administrative boards, appears to have subsided, at least temporarily. No new constitutional boards were created; a proposal to establish a board of education in West Virginia was rejected. The burden placed on the voters by freezing administrative bodies into the constitutional structure was indicated, however, by the fact that two amendments were necessary—and a third was unsuccessfully attempted—in order to make minor changes in the structure and powers of existing boards. In California, for example, one of the 17 questions was submitted to the electorate because the legislature wished to change the Railroad Commission to a Public Utilities Commission and make the appointment of commissioners subject to senatorial approval.

Retirement systems for state employees were authorized in Texas and Louisiana. California, again struggling under detailed constitutional regulations, authorized the appointment outside of the civil service of a deputy superintendent of public instruction and three associate superintendents. The Florida voters turned down an amendment which would have made the state budget director an appointee of the legislature, and those of Arizona rejected a proposed four-year term for executive officers

LEGISLATIVE

Legislative salaries and legislative sessions accounted for almost a score of constitutional amendments, all proposed by legislatures. By the salary amendment already mentioned, the South Dakota legislature will hereafter be permitted to fix the compensation of its members. Legislative salaries will be increased also in Alabama, Connecticut, and Idaho, but the voters of Missouri, Arizona North Carolina, and North Dakota refused to increase the pay or expense allowances of their lawmakers.

Four amendments provided for changes in legislative sessions. California established annual sessions but a similar proposal in Connecticut failed to win approval. Alabama and New Mexico adopted minor changes in provisions for legislative sessions.

Vacancies in the Kansas legislature will hereafter be filled in such manner as the legislature may provide instead of by special election, but an attempt to make a similar change in Wyoming was rejected at the polls Also rejected was an attempt to add one member to the Oregon senate.

Two states adopted amendments by which their legislative procedures will be simplified. In South Dakota the number of readings of a bill will be reduced from the traditional three to two—one on introduction and one on final passage, and hereafter the reading of a bill "by sections" in the Oregon legislature may be dispensed with in either house by a two-thirds vote.

STATE FINANCES

Almost a third of the measures submitted to the electorates were related directly to state finances. These included bond issue measures, mostly for veteran's benefits, tax exemptions or special tax rates, and the allocation of state funds for specific purposes. In addition to the veteran's benefit acts, educational funds accounted for a large proportion of the expenditure authorizations.

With the view to taking advantage of such assessments as Congress may permit, four states repealed or modified their constitutional prohibitions against the taxation of Federal properties. Other states granted limited exemptions or low rates on new manufacturing plants, air transport facilities, and forest lands. Louisiana alone adopted six tax exemption amendments, including two which excluded farm tractor fuels and bulk deliveries to Federal service forces from the constitutional one-cent motor-fuel tax. North Dakota also made provision for the refund of taxes paid on tractor fuels. California repealed its educational poll tax.

Texas adopted a constitutional amendment to require that all motor fuel tax revenues, except a portion set aside for the school fund, must be used for highway construction and maintenance purposes, and Arizona adopted an initiated bill providing for the distribution of a portion of the gasoline tax revenues to local governments for streets and roads. Michigan adopted an initiated constitutional amendment which requires that the revenue from "one cent" of the sales tax be apportioned among the local governments according to population.

Voters of North Dakota rejected a proposed constitutional tax levy for post-war rehabilitation, and those of Oregon refused to permit a special levy for the construction of armories in a score or more of cities throughout the state. The North Dakota electorate also overruled the state legislature on a referred bill which would have increased the assessed value of property from 50 per cent to 75 per cent of its "full and true value."

In rejecting five out of six constitutional amendments submitted by the legislature, Florida voters turned down a proposal that would have restricted all appropriations to two years and prohibited incidental appropriations in other legislation. Colorado refused to adopt a proposed amendment that all balances in the old age fund at the close of each fiscal year should remain in that fund for future payments and expenses.

EDUCATION

On the whole the electorates demonstrated a willingness to increase governmental expenditures for education. Here California took the lead by writing into the constitution a section which provides that state support for schools shall be increased to $100 per pupil, that local districts shall be authorized to determine the amount of money to be raised from school taxes, and that the minimum salary for teachers shall hereafter be $2,400 a year. This amendment, initiated by petition, was adopted in preference to a more moderate state-aid amendment submitted by the legislature. Oklahoma adopted an amendment to provide that the legislature shall raise and appropriate for common school support a sum equal to $42 per pupil, Oregon enacted a bill for state support at $50 per pupil, and Utah increased its state aid to schools by 50 per cent Nebraska, on the other hand, rejected a state-aid amendment. All of the state-aid measures, except the rejected alternative plan in California were proposed by popular initiative.

In addition to the state-aid plan already mentioned, Oklahoma adopted an initiated amendment to require that the legislature provide free textbooks for common schools, and two amendments raising the limits on local school tax levies. Oregon adopted a rural school reorganization bill referred by the legislature, whereas the voters in Arkansas rejected by a narrow margin an initiated reorganization bill. Wisconsin's electorate refused to permit the legislature to provide for public transportation of children to and from parochial schools.

Louisiana adopted an amendment to authorize the establishment of a statewide teacher's retirement system As already mentioned, the West Virginia legislature failed to win approval of its plan to abolish the office of elective state superintendent of public instruction, whereas the California legislature was authorized to add four non-civil service deputies to the superintendent's staff.

VETERANS BENEFITS

Veterans of the Second World War were the direct or primary beneficiaries of ten measures adopted by popular vote and the intended beneficiaries of two that were defeated. Michigan, Illinois, and Rhode Island approved bond issues for veterans' bonus payments, and Rhode Island adopted a second measure extending the same benefits to veterans of the Merchant Marine. In Maine, on the other hand, a veterans bonus amendment and a bond issue act were rejected by substantial margins. Limited property tax exemptions were granted to veterans by Arizona and Louisiana, while financial credits and other assistance in the acquisition of homes and farms were authorized by California, Texas, and New Jersey. The New Jersey bond issue was authorized in order to provide housing for veterans "and other people of the state," but undoubtedly a large part of the support was won because of the specific inclusion of veterans. A New York measure to increase the authorized subsidies for housing probably should be classified as a veteran's benefit measure also.

LABOR

The general reaction against organized labor was reflected in the popular vote on submitted questions. Arizona, Nebraska, and South Dakota adopted anti-closed-shop amendments to their constitutions, thus following the examples set by Arkansas and Florida in 1944. Massachusetts also adopted an initiated act directed against organized labor, requiring that all unions file names and salaries of officers, financial reports, and statements of their dues, fines and other assessments. California voters, by a margin of almost three to one, rejected an initiated fair employment practices bill.

LOCAL GOVERNMENT

Thirty-five measures, including the Oklahoma school tax amendments already mentioned, related directly to offices and powers of local governments. Of these acts, about half were special in character, pertaining to specifically named communities. Louisiana adopted eight of the special amendments, Alabama three, and Florida and Maryland one each. Florida and Georgia accounted for four special amendments that were rejected at the polls.

The general acts relating to counties and cities did not meet with wide popular approval. Municipal tax limits were raised in Alabama, and Arkansas counties were authorized to levy taxes to provide library services, but the latter state refused to increase the constitutional limit on county road taxes. A half dozen amendments to increase terms of local officers, to eliminate prohibitions against repeated succession in office, and to authorize increased debt limits were rejected. North Dakota voters refused to authorize optional plans of county government, and the Louisiana electorate turned down a plan to permit municipalities to appropriate moneys for aid to agriculture and industry.

SUFFRAGE AND ELECTIONS

The electoral process—the right to vote and the manner of holding elections for public officers and on public questions—was the concern of a half dozen proposed constitutional amendments. Obviously for the purpose of facilitating the disfranchisement of Negroes, Alabama added to its suffrage qualifications the requirement that a voter must be able to "understand and explain" any article of the United States Constitution. Louisiana, on the other hand, extended the suffrage to inmates of a United States Marine Hospital. Colorado authorized counties to purchase and use voting machines.

In Illinois the voters refused to change the method of amending the constitution. The proposal would have permitted the submission of three amendments at one election instead of only one, and it would have required a two-thirds vote for adoption of amendments. The present article requires approval by a majority of those voting at the election, and it was because of this requirement, and not an express negative vote, that the amendment was defeated.

The California constitution was clarified by a specific authorization to the legislature to propose and submit amendments to laws previously enacted by initiative and referendum, but at the same time the voters refused to validate amendments previously added to the initiated alien land law of 1920.

OLD AGE PENSIONS

Old age pension schemes were less prominent than they had been during the past decade. Only in Oregon was a general old age pension act proposed, and that was rejected by a wide margin. Another proposed change in the old age assistance law—concerned primarily with the structure of the administrative commission—was defeated in Massachusetts.

HEALTH AND HOSPITALS

The Alabama legislature was authorized to establish and maintain hospitals and health centers, as were also the counties in that state, and to accept Federal grants for the purpose. A South Dakota statute, requiring that all hospitals and related institutions be licensed by the state board of health, was upheld on referendum.

INTERNAL IMPROVEMENTS

Constitutional restrictions on state participation in internal improvements were modified in Michigan and Alabama to permit the construction of airport and related facilities. The Michigan amendment also added waterways and harbors and the reforestation, protection, and improvement of "land in the state." A Wyoming amendment to authorize state construction of airports failed to win the required majority of all ballots cast at the election. Three amendments designed to modify state activities for the promotion of agriculture and industry were defeated in Louisiana, and an initiated bill, which would have required the approval of voters in the area as a prerequisite to the acquisition of operating properties by a public utility district, was defeated in Washington.

LIQUOR AND BETTING

Regulation of liquor and gambling had a minor place among the questions before the electorates. North Dakota enacted an initiated bill to prohibit the sale of liquor in places where other commodities are sold, except tobacco products and soft drinks, while Idaho rejected a measure to provide county option and to limit the amount of liquor that one might legally possess. California voters rejected an initiated bill to authorize and regulate pari-mutuel betting at greyhound races.

INTERNATIONAL POLICY

Though it had no legal force, the vote on a question placed on local ballots in Massachusetts was highly significant. By overwhelming margins the voters approved a proposal to instruct delegates to the State's General Assembly to ask the United States authorities to propose and support amendments to the U. N. Charter in order to strengthen the United Nations and "make it a World Federal Government able to prevent War."

MISCELLANEOUS

Oregon repealed a constitutional provision which prohibited Chinese from holding or working mining claims. In the same state a referred bill to restrict and regulate the fishing of salmon in coastal and inland streams was upheld. Louisiana authorized district courts to try cases involving violations of fish and game laws occurring on the coastal waters of the state, but two proposed amendments, which would have extended jurisdiction in fish and game cases to the justice of peace courts, were rejected.

Women were made eligible for jury service in North Carolina, and on an advisory vote Massachusetts approved the enactment of legislation to require women to serve on juries. Maryland and Louisiana adopted minor changes in the constitutional provisions relating to the courts, while California voters refused to approve the establishment of a court of tax appeals.

ELECTORAL LEGISLATION

By O. Douglas Weeks
Professor, The University of Texas

GENERAL

Only 12 of the 24 states which held legislative sessions during 1946 enacted electoral legislation, and in only half of these were the changes voluminous or important. The most extensive and significant amendments to election laws were made in Massachusetts, New York, and Virginia, in which special commissions (in New York, a joint legislative committee) have been at work studying the election statutes and proposing revisions.

NOMINATIONS

Kentucky extended the time for filing nomination papers, certifying candidates, and the drawing by lot for places on the primary ballot. The dates for holding primaries in second and fourth class cities were moved from the third to the seventh Saturday before the general election. The primary was dispensed with in certain city elections when no more than two candidates announce for elective offices. Louisiana legislated with respect to the dates of holding primary elections, their conduct, and making returns thereof. In Massachusetts the primary date for 1946 was moved from the seventh Tuesday before election to the 18th of June; a change of date was also made for holding special primaries to fill vacancies in the State House of Representatives.

The date for holding the 1946 primary election in Michigan was shifted from September to June (third Monday), and state central committees were required to canvass the proceedings of conventions not less than 115 days prior to the November, 1946 election; the proof copies of the official general election ballot were required to be filed at least 97 days prior thereto and absentee ballots to be delivered to the county clerks 92 days before the election. New Jersey moved the primary date from the second to the first Tuesday in June, to which date the primary formerly held on the third Tuesday in May in presidential years was also moved. Earlier dates were set for caucus meetings and for filing nominations for general elections in Rhode Island. Virginia now requires 65 days notice of primary candidacies by publication, posting, or both; also party committees must furnish the State Board of Elections with the names of candidates who have filed in primary elections.

In Missouri the X mark was substituted for scratching as the method of marking primary ballots. New York made minor changes as to nomination petitions, posting lists of nominations, and the number of ballots to be provided in primary elections, enacted amendments affecting removals of party committee members and the filing of party committees, and made temporary alterations in regard to state and county committees for 1946.

CONDUCT OF ELECTIONS

Virginia created a bipartisan State Board of Elections consisting of three members to be appointed by the Governor and General Assembly, which succeeds to the powers and duties of the Secretary of the Commonwealth and the Board of State Canvassers imposed by the election laws. The functions of the new board include supervision of the work of local electoral boards and registrars, the purging of registration, enforcement of election laws, and the preparation and distribution of records. The board is to have a secretary with an annual salary of $5,000, and board members are to receive a per diem of $20. Virginia also revised provisions affecting polling hours, filing for general elections, preservation of unused and defaced ballots, extension of assistance to disabled voters, jurisdiction in contested election cases, compensation of electoral boards, death or withdrawal of candidates, alteration of voting districts, and the provision of facilities for polling places.

New York altered the conduct of elections in many details with respect to making returns, submitting constitutional amendments, polling equipment, voters' registers, vacant candidacies and offices, election officials, ballot paper, voting machine procedure, challenge affidavit form, canvassing boards, etc. Kentucky extended the time for filing candidacies for municipal elections and for the certification of constitutional amendments, changed provisions covering contested elections, recounts, and voting machine procedure, and provided for state payment of one-half the cost of holding an election in each county up to $20 for each precinct, in addition to any sum paid by the state for ballot papers.

Louisiana legislated with respect to the pay of election commissioners and the qualification fees of independent candidates. Massachusetts altered town ballots to include street addresses of candidates and amended the requirements as to sealing ballot boxes. Owing to the abolition of the office of justice of the peace in Missouri, new bipartisan groups were created in each county, appointed by the county court, to count absentee ballots and canvass election returns, and jurisdiction in contested election cases was vested in other courts. Contests involving the office of governor were transferred from the Missouri General Assembly to the Supreme Court.

Nebraska allowed candidates for an office with surnames the same in spelling or sound to have their addresses and occupations placed on the general election ballot. New Jersey provided for mailing out sample ballots and clarified voting machine provisions. Rhode Island adopted daylight-saving time for polling. An attempt failed in Maine to change the general election date from September to November. South Carolina and Vermont enacted minor local legislation involving elections. Connecticut approved a constitutional amendment to permit the succession of the lieutenant-governor-elect to the governorship in the event of the governor-elect's death or his failure to qualify.

REGISTRATION

Per diems and ten-day continuous sessions were provided in Kentucky for county boards of registration and purgation both before the primary and general election; failure to vote for two years outside first class cities no longer will remove a voter's name from the registration roll. Massachusetts enacted additional absent registration provisions for the physically disabled and provided for continuous registration in towns having 600 or more voters. Michigan extended the system of registration formerly restricted to townships and cities of 5,000 or above to all townships, cities, and villages. New registration provisions for voters who change their residence and for veterans were added in New Jersey. New York altered provisions with respect to the literacy requirement for war ballot voters, voters' registers, registration reports, central registration procedure, registration of voters deriving citizenship through naturalized citizens, and registration of persons absent on military duty. Rhode Island and Virginia amended their registration procedure as to certain details.

ABSENT VOTING

Kentucky legislated to apply absent voting to all elections and primaries both inside and beyond the United States and enacted special provisions for the registration of voters in the armed forces. Soldier voting for the election of 1946 was facilitated in various ways in Massachusetts. Michigan extended her soldier voting law of 1944 to cover 1946 with minor changes. New York reenacted her 1945 law providing for a temporary state war ballot commission and to facilitate voting in the armed forces to apply to the general election of 1946 with some changes as to procedures, dates of holding conventions and primaries, the certification of candidates and the filing of local option petitions. Some alterations were also made in the New York absent voting law for civilians, and a constitutional amendment was initiated to extend absent voting to elections other than general elections. A constitutional amendment was proposed in Rhode Island to extend absent voting on account of old age, physical disability, illness, and other physical infirmities. Slight changes were made in the absent voting law of Virginia.

CORRUPT PRACTICES

Massachusetts revised her corrupt practices statutes. Provisions defining corrupt practices, election inquests, and violations of election laws were amended with a view to effecting a more logical arrangement of subject matter, such as placing the penalty for each violation in the same section with the offense. Fines as alternatives to imprisonment for certain offenses were provided. Most important was the liberal increase in maxima for campaign expenditures for all elective offices. Allowances for U. S. Senator and Governor were increased from $5,000 in the primary and $10,000 in the general election to $20,000 for each election; allowances for other offices were doubled in most cases.

Authorized campaign expenditures for state senators in both primaries and general elections were increased in Kentucky from $500 to $1,000 and for state representatives from $350 to $750. Kentucky forbade any candidate in a primary or general election to agree not to file a contest or to agree to withdraw in return for any payment or other valuable consideration. Louisiana altered the penalty for fraudulent voting. New York forbade political advertising within 100 feet of polling places, established a penalty for issuing a fraudulent certificate of literacy, and set up a new provision as to false statements or affidavits of witnesses to petitions. New Jersey clarified her law with respect to the receipt of contributions by party committees. Virginia changed intimidation of election officials from a misdemeanor to a felony, placed existing corrupt practices statutes under the election laws, and forbade the making of a copy of the ballot at the voting booth.

COUNTY GOVERNMENT

By Mary Capen Davis
New Jersey College for Women, Rutgers University

GENERAL

Legislative activity in the field of county government was relatively slight during 1946 as most state legislatures did not meet in regular session. Nevertheless, this does not mean that the problems of county government have been neglected. The whole position of counties, as local governmental units and their ability to perform the services demanded of them, have been made subjects of considerable study. The general direction of such legislation as was enacted, dealing with county functions, was toward greater flexibility of operation. One result of a national emergency is increased emphasis on effective performance on all governmental levels. In the counties, this is manifested by continuing efforts to reorganize and streamline the machinery of government and by a tendency toward cooperation among all types of local units.

IMPLEMENTATION OF CONSTITUTIONAL CHANGES

Georgia and Missouri adopted new constitutions in 1945, both of which provided for changes in the county pattern. Legislatures in these states have now begun the task of translating constitutional recommendations into legislation. The principal items in the Georgia constitution relating to counties pertained to education, finance, and consolidation of counties. In the first category, an enabling act, describing the purposes for which counties may levy taxes, was passed. In the second, is another enabling act authorizing the transfer to county boards of education of all the powers of existing local district trustees of schools. The act provides further that each county shall be one school district under control of a county Board of Education and enumerates the general and financial functions of new districts. This legislation clarifies and implements the new constitutional provision regarding education.

In Missouri, a special Revision Committee on Local Government was established by the House of Representatives to draft legislation needed to effectuate constitutional changes. The major work of the legislature regarding county government was to establish four classes of counties on the basis of assessed value and to establish three alternative forms of government for the fourth class within which are most of the smaller, poorer counties where simpler and less expensive government has long been needed. Each alternative form of government thus provided would result in a reduction in the number of county officers and a clarification of responsibility. In addition, the legislature passed nearly 100 bills making important changes to fit existing laws to all counties in a class. (Cf. for detailed discussion of the Missouri reforms: Sparlin, E. — "Missouri Counties Streamlined," *National Municipal Review,* July, 1946.)

COUNTY MANAGER

Two counties, which have for some time been interested in the county manager form of government, moved closer toward achieving it in 1946. Fulton County, Georgia voted in favor of a county manager form in June. The Fulton County Board of Commissioners authorized the appointment of a committee to draft a manager bill for introduction in the next legislature. Montgomery County, Maryland voted Nov. 5 for a commission to draft a county manager charter. The first attempt to get such a charter had been defeated in 1944.

EXTENSION OF COUNTY FUNCTIONS

The development of new county functions, with an accompanying organizational growth, continues. For example, Virginia authorized the counties of Warwick, Elizabeth City, and York, together with the cities of Newport News and Hampton and the town of Phoebe or any two or more of them, to establish a commission for the construction and operation of airports. The commission is empowered to exercise the right of eminent domain. These same counties and cities are also authorized to set up the Grandview State Park Commission to establish and operate a state park until it is taken over by the Virginia Conservation Commission.

In New York, under a law that became operative April 1, 1946, counties may elect to become special districts for welfare purposes. Rochester voted to transfer all welfare functions to Monroe County in accordance with this act. New Jersey gave its counties and municipalities the power to create sewage authorities with the right of each to issue its own bonds. California counties were given permission to establish inspection services for the licensing of agencies for the care of children and of the aged. These services must be accredited and approved by the State Department of Social Welfare. Their costs are to be borne by the state.

COUNTY-CITY RELATIONS

Evidence of increased cooperation between counties and cities is to be observed in a few states. California authorized its counties to assist any city in the acquisition of property to build and maintain an airport. Such assistance may take the form of money, material, services, or property. Also in California, Santa Barbara County established a water agency to negotiate for water districts and cities inside its limits with the United States Bureau of Reclamation. The agency is to cooperate in providing adequate water supply for the cities. One of the acts of the Missouri legislature, in its county reform program, was to permit counties to contract with cities or other counties for a common service. Louisiana voters adopted an amendment passed by the 1946 legislature providing for creation of a city-parish (county) charter commission to work out a consolidation or reorganization of the local units within the parish of East Baton Rouge.

VETERANS' AID

As this article pointed out in 1945, the principal agent in the development of veterans' aid programs has been the state rather than the county. However, there has been some county action in this field. Wisconsin counties, cities, towns, or villages were allowed to appropriate money or grant the use of land or buildings to provide houses for veterans or servicemen. California appropriated $7,500,000 for any local agency of the state to use in supplementing Federal funds for veterans' emergency housing. The State Director of Finance is to have control over the conditions under which the money is granted and to have supervision of the management and operation of any local housing facilities built. New Jersey authorized its counties to establish apprentice and on-the-job training programs for veterans in public service positions. In New York, counties were empowered to lease or lend any real property to the United States for any function related to the war effort or the hospitalization, rehabilitation, and welfare of war veterans.

STATE AID TO COUNTIES

Some instances of state aid are to be found in the small legislative record for 1946. New Jersey and Missouri provided aid to counties for construction and maintenance of roads. California appropriated $45,000,000 to be allocated to counties as help in the construction of public works to prevent or alleviate unemployment. In Ohio, county homes for the aged will now receive state support to supplement the often inadequate county funds. Virginia, which for some years has been developing a state advisory service to counties on real estate assessment problems, appropriated $20,000 for carrying on its assistance program. It also made mandatory the reassessment of real estate in all counties within the next four years. The significant feature of this program is its voluntary character. Counties may avail themselves of professional advice and personnel supplied by the state but they are under no compulsion to do so.

STUDIES OF COUNTY PROBLEMS

The interim between regular legislative sessions has been utilized in a number of states for the study of various aspects of county operation with a view to making recommendations to the 1947 legislatures. Some of these studies have been focussed on specific problems of county government. Others have been directed to a survey of the place of the county as a local governmental agency and to possible ways of increasing its effectiveness. The Connecticut Legislative Council, which was directed by the 1945 General Assembly to study the relationship of state and county with respect to public wards, issued a report of its findings. It recommends elimination of the existing division of guardianship between state and county and the placing of all children under the care of the state where trained social workers would have continuous supervision over them. The county homes would then be used as reception centers before placing the children in foster homes rather than as permanent residences. This reallocation of functions would simplify the administration of the care of neglected children and improve the quality of that care.

In Tennessee, the Board of Trustees of Knoxville issued a study, "Knoxville-Knox County Relationships in the Field of Library Service." This report, prepared by the planning commissions of Knoxville and Knox County, deals with the question of providing adequate library service for both city and county. It favors assumption by the county of full responsibility for library service in both the urban and the rural area, with the city supplementing the county service if necessary. If such a solution were adopted it would result in simpler administration, more adequate financing, and more equal service for county and city residents. The governor of Oregon has appointed a committee to study rural and suburban zoning and to draft legislation to be presented to the 1947 legislature. In New Jersey, a Senate Joint Resolution created a legislative commission "to study salaries fixed by statute of State and county officers, and ascertain existing inequalities from the standpoint of duties and county populations . . ."

Four states have undertaken examinations of the general status of county government. A New York Temporary State Commission, created in 1944 to "study, codify, revise and make uniform . . . existing laws relating to counties . . ." was continued until Feb. 15, 1947. The Massachusetts legislature established a commission to consider the advisability of abolishing the county as a unit of government and transferring its functions to appropriate departments of the commonwealth. Since counties in the New England states operate more as agencies of the state than as representatives of a local community, the question of their abolition is almost entirely one of administrative convenience.

In Michigan, the Institute of Local Government, an organization of county officials, is sponsoring a proposed constitutional amendment which would increase the home rule powers of counties. A county chief executive would be optional under the charter plan provided by this amendment. After defeat in 1945 of a constitutional amendment designed to reform county government in the state, the Wisconsin legislature established a Joint Legislative Interim Committee to study the general problem. It spent the year investigating possible solutions to the county government tangle. The avenue of constitutional reform having been blocked on several occasions, the committee seems to be leaning toward a plan of extensive statutory changes within the existing constitutional framework.

Results of these various studies should be visible in 1947, which gives every indication of being a year of fruitful activity within the area of county government.

PERIODICAL PUBLICATIONS

Book of the States, The
Council of State Governments, 1313 E. 60th St., Chicago.

National Municipal Review
299 Broadway, New York City.

Public Works
310 East 45th Street, New York City.

State Government
Council of State Governments, 1313 East 60th St., Chicago.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Legislators Assn., 1313 E. 60th St., Chicago.

Civil Service Assembly, 1313 E. 60th St., Chicago.

Civil Service Forum, 150 Nassau St., New York City.

Council of State Governments, 1313 E. 60th St., Chicago.

Institute of Local and State Government, 3437 Woodland Ave., Philadelphia.

National Assn. for Constitutional Government, 716 Colorado Bldg., Washington, D. C.

National Civil Service League, 67 W. 44th Street, New York City.

National Municipal League, 299 Broadway, New York City.

DIVISION V

MUNICIPAL GOVERNMENT

NEW YORK CITY AFFAIRS

By Theodore H. Skinner
Professor, New York University

INCEPTION OF THE NEW ADMINISTRATION

The year 1946 may be regarded as particularly important in that it marked the first full year of peacetime operations while simultaneously the Democratic Party took over control at City Hall after 12 years of Fusion administration under Fiorello La Guardia. During the preceding mayoralty campaign great emphasis was placed on the fact that the Democratic candidate and successful contender, William J. O'Dwyer, was not a typical organization man, and that his candidacy had been accepted with some reluctance by the leaders of the Democratic organization within the city. Many voters were persuaded to vote for General O'Dwyer by reason of his campaign pledges of efficient and nonpartisan municipal government. Some indication of the independence which might be expected from the new administration was shortly found in the retention of several key men of the La Guardia regime, notably Police Commissioner Wallender, Purchase Commissioner Pleydell, and Park Commissioner Robert Moses, the latter being also designated as Coordinator of the entire municipal public works program. This last appointment particularly seemed to indicate that the usual "machine" favoritism of insiders in the contracting field would not be permitted.

MAYOR O'DWYER AND HIS PROBLEMS

On the negative side, observers could point to the fact that the new Mayor would be dependent, in many respects, on the support of a majority of the Board of Estimate. Three of his associates on that body, the Borough Presidents of Brooklyn, Queens, and the Bronx, had long been associated with organization politics, as was true also of the new Comptroller, Lazarus Joseph, and Council President Impelliteri. In addition, the Democratic majority in the City Council is composed almost entirely of organization men. At the end of his first year in office, although many of his actions had met with criticism, it was generally conceded that the Mayor had measured up reasonably well to his campaign promises.

Mayor O'Dwyer took over the city at a time when many of its services had been undermanned and consequently ill-maintained during the four years of the war. Chief among his problems was the rehabilitation of the subway system. It was estimated that at least $200,000,000 would be required within a period of three or four years to provide the city with adequate transportation. Sizeable sums would be required for emergency housing, erection of new schools, and recruitment of the Police and Fire Departments to pre-war strength. With rising prices, a demand by municipal employees generally for wage increases would be inevitable. Yet like all cities in the country, New York is definitely limited in its power to tax or borrow.

The first two months of his administration were especially trying for

Mayor O'Dwyer. Before he had had time to become reasonably well acquainted with his new duties he was threatened with a transit strike by the Transport Workers' Union. Shortly thereafter it became apparent that the city was faced with a prospective deficit of over $100,000,000 during the next fiscal year. A third major problem was caused by a strike of tugboat employees, threatening the city with a disastrous fuel shortage. Finally, toward the end of February, 1946, the transit workers threatened another strike. In each case Mayor O'Dwyer managed to resolve the difficulties confronting him, but not without severe criticism from many quarters.

FINANCIAL PROBLEMS

As indicated above, one of the most serious problems confronting the new administration was that of municipal finance. Upon taking office, the Mayor made a careful survey of the city's fiscal situation and announced that a deficit of approximately $120,000,000 was in prospect for the ensuing fiscal year. This resulted from increased expenditures to meet the postwar situation and the definite limits placed by the State Constitution on the city's borrowing and taxing power. In addition to the basic tax on real estate, the previous administration had obtained legislative permission to levy certain special taxes, notably the impost on sales. These, however, were not deemed sufficient. Within three years, it was estimated that the city's normal public works program, including subway improvements, airport and market facilities, streets, etc., would run close to $1,400,000,000, to say nothing of $1,500,000,000 additional for a redevelopment program for blighted areas, as drawn by the Citizens' Housing Council and approved in principle by Mayor O'Dwyer and his associates. Accordingly, in a letter to the State Comptroller, the Mayor requested legislation to increase the city sales tax from one to two per cent, the entire amount to be earmarked for subway improvement; the creation of a City Airport Authority and Market Authority to finance completion of Idlewild Airport and the proposed lower Manhattan produce center outside the city debt limit; and the allocation to the city of a larger share of state tax revenues.

These proposals aroused tremendous controversy, particularly that regarding the increase in the sales tax. This tax had originally been inaugurated to provide funds for relief during the depression and had been continued for general purposes after that emergency subsided. In 1941, Mayor La Guardia had obtained a cut in the tax from two to one per cent. Many opponents had basic objections to any sales tax whatever; others preferred to double the subway fare; while a third group wished to reserve all such revenues for the redevelopment of blighted areas.

These fiscal proposals met with a mixed reception at Albany. The Democratic minority in the legislature naturally favored the Mayor's program, but the majority was reluctant to go the whole way. There was little opposition to authorizing an increase in the sales tax and certain other levies of previous years, but the proposal for a larger share of state collected taxes met with defeat. The Governor and his supporters in the legislature emphasized that the new formula for state grants to municipalities had already increased the city's quota and refused to accept the proposition that the metropolis' share of state aid should be directly proportionate to its contribution to the state treasury. Bills were approved, however, authorizing the creation of the proposed Airport and Market Authorities. As in previous years, another bill to authorize the operation of the city subway system by a Transit Authority failed of passage.

BATTLE OF THE BUDGET

Having been unable to obtain as much financial assistance from the state as he had deemed necessary, the Mayor was forced to modify his budget accordingly. As originally presented to the Board of Estimate, it called for a total expenditure of $857,131,849, an increase over the previous year of $93,500,000. The new or increased taxes voted by the legislature were expected to bring in some $67,000,000, and the increase in state aid $16,000,000. The remainder of the increase would have to be taken care of by a rise of five points in the basic tax rate. The new rate of 2.72 would still be 17 points below the record tax of 1943-44.

The extent of the rehabilitation required at the start of the post-war period was revealed by the fact that the increased costs for plant repair and equipment were higher than the increase provided for personal services, and this despite the provision for nearly 6,000 new jobs, including 3,000 new police. The increase in living costs since the end of hostilities was given recognition by the grant of $15,000,000 for salary increases and cost of living bonuses to more than 100,000 employees, the amounts ranging from $120 to $240, and going largely to the lower salary groups.

As in the past, the hearing before the Board of Estimate revealed the fact, usual in democracies, that the budget proposals satisfied no one. The Citizens' Budget Commission assailed the total as fantastically high, and those groups which had been pressing for an increase in the subway fare moved again to the attack. On the other side, employee spokesmen and union representatives assailed the pay increases as completely inadequate, the demands ranging from the $2 per day increase sought by the Transit Workers Union to an additional and permanent $340 over and above the proposed temporary bonuses. So emphatic were the objections raised from the employees' standpoint that the Mayor, after special conferences with A.F. of L., C.I.O. and other labor spokesmen, agreed to an upward revision of salaries, beyond the provisions originally made, amounting to between $10,000,000 and $15,000,000. It was felt that an increase in the sales and pari-mutuel tax collections over the amount originally estimated would provide the necessary funds without any further rise in the tax rate.

This decision on the part of the Mayor met with the approval of the Board of Estimate, and the budget as finally adopted by that body reached a total of $865,212,820, marking an increase over the previous year of $101,595,553. It is interesting to note that this marks the second successive year that the hearings before the Board of Estimate have resulted in substantial budget changes. For many years, such hearings, though provided in the Charter for the purpose of providing a modicum of popular control over expenditures, have been mere formalities, the Mayor in many cases not even bothering to make an appearance. In 1945, Comptroller McGoldrick broke with the Mayor and took the lead in responding to public pressure, and, in 1946, it was the Mayor who moved to inaugurate the desired changes.

While the current operating budget was being discussed and adopted, the precarious nature of the city's fiscal position was highlighted by a special report to the Mayor from Robert Moses, acting in his capacity as Coordinator of City Construction. The report, requested by the Mayor for his guidance in mapping out the capital program for his four-year term, pointed out that it would be necessary to defer some 400 public works projects, costing close to $1,000,000,000, for at least four years or longer unless some drastic change in the entire financial picture could be made. Moses was of the opinion that no such change could be expected unless the subway system was placed on a self-supporting basis, thus taking $425,000,000 of subway debt out of the constitutional debt limit. In the absence of such change, the report recommended rescission of allocations already made in the current capital budget for some 180 projects, affecting virtually every department of the city government. This report served to add fuel to the demand for the end of the five-cent fare, which continued to grow throughout the year. While no action was taken prior to the November election, it seemed likely that the administration would be forced to take some action in recognition of the problem so posed by the Moses report. Nevertheless, the subway fare increase was rejected by the Board of Estimate Feb. 12, 1947 after a two-day public hearing at City Hall in which proponents and opponents were given a full opportunity to present their views.

THE TRANSIT CRISIS

In company with many other city executives, Mayor O'Dwyer found it necessary to devote a vast amount of time to those particular problems of the post-war period which intensified the tension between management and organized labor. Hardly had he taken office when a crisis was created by the Transit Workers Union and its leader, Councilman Quill. In an attempt to avoid the necessary expenditures for refurbishing the municipal power stations which supplied much of the energy required by the subway system, the head of the Board of Transportation, General Gross, recommended their sale to the Consolidated Edison Co., and the purchase of all necessary power from that concern. Thereupon Quill threatened to call a strike of the workers if the Board were permitted to carry out this proposal. Not fully acclimated to his new duties, the Mayor was in no position to meet such an attack. Accordingly, he resolved the difficulty by agreeing to permit no such transfer in the absence of a favorable vote in a city-wide referendum. The incident provoked considerable censure of Quill, and demands were made on the City Council to oust him from his seat in that body. Taxpayers' suits were also started designed to declare his seat vacant on the ground that he had violated the City Charter provision forbidding any member of the Council from receiving remuneration for services with any concern doing business with the city. There is considerable doubt as to whether the Charter, designed to eliminate patronage in city contracts, would also apply to a representative of a union of city employees. At all events, at the close of the year Quill was still a member of the Council.

The position of the union regarding the power plants was only a minor one. More serious was the demand for sizable pay increases and for the recognition of the T.W.U. as the sole bargaining agent for the transit workers *vis-à-vis* the Board of Transportation. This latter problem was complicated by two factors. The Board of Transportation is a semi-autonomous body over which the Mayor exercises no direct control, and its members have long been adverse to adopting the collective bargaining techniques generally employed by labor and management in private industry. This position had been solidified by former Mayor La Guardia's repeated insistence that city employees had no right to strike against the city government. On the other hand the T.W.U. is not the only organization among the transit workers, and the other unions bitterly resent its demand to be accorded the position of sole representative of all the workers.

Faced with a threat of a new transit walkout the Mayor was able to persuade Councilman Quill to postpone action pending investigation of the entire matter of a special Transit Advisory Committee to be set up immediately. Those named to this Committee by the Mayor were all prominent citizens, experienced in the mediation of labor disputes. After due deliberation during most of the summer, the Committee recommended a wage increase for the workers, retroactive to July 1, and the recognition by the Board of Transportation of such organizations as the workers might designate for bargaining purposes. Over the objections of the majority of the Board, the Mayor put through the suggested pay increase. The Citizens' Budget Commission immediately protested the use of city tax notes to cover any such retroactive award and took the matter to the courts. Aroused by this action, the T.W.U. threatened once more to shut down the subways. Before the deadline set, however, the courts upheld the city's action regarding the retroactive pay, and after further conferences with the Mayor and C.I.O. President Murray, Quill agreed to leave in abeyance the matter of his union's position as sole bargaining agent. The issue, however, will very probably arise again in 1947.

THE MARITIME STRIKE

Hardly had the first transit crisis in January been resolved than a new problem confronted the Mayor. On Feb. 1, 1946, the waterfront was tied up by a strike of tugboat workers, resulting in a rapidly increasing fuel and coal shortage. The situation became so serious, as all attempts to settle the strike failed, that on the evening of Feb. 11 the Mayor put into effect an emergency rule more drastic than any experienced by the city since the Civil War. Stores, offices, factories, theatres, and schools were closed. Eighteen hours later, the emergency decree was as suddenly lifted. Faced with bitter criticism by the Board of Trade on the ground of losses to business running into millions of dollars, the Mayor stated that he had been informed at the time that there was barely enough fuel oil available to last the city another six hours, but that during the period of the emergency decree the Office of Defense Transportation, using government and railroad tugs, had brought an additional 4,000,000 gallons and had guaranteed to maintain that delivery while the crisis lasted. The Mayor indicated that he had relied primarily on the prognosis of Health Commissioner Stebbins, a hold-over from the La Guardia regime. That official, feeling himself the scapegoat, promptly resigned. The incident clearly indicated how the nature of our present economic system can make a mockery of municipal home rule.

This dependence of the city on factors outside its control was again strikingly illustrated by the brief and abortive railroad strike in May, and again in September when difficulties along the waterfront and in the trucking industry brought heavy losses to New York business men, and placed further burdens on the city's government.

In the maritime strike particularly there was little that the city could do, save to utilize the police force to preserve order. The basis for the maritime strike was the intense rivalry between CIO and AFL seamen's unions. The CIO unions first won a wage increase from the ship owners. Then the AFL unions managed to obtain a better settlement. This, the War Stabilization Board refused to accept, whereupon these unions walked out in protest. When the W.S.B. yielded to them, the various CIO unions then struck to obtain the same wage scale. Eventually the National Government was able to bring about a settlement, but in the meantime the port of New York, in common with other coast cities, had suffered tremendous losses, with its government largely helpless to intervene.

THE TRUCKING STRIKE

In the trucking strike, however, the Mayor shouldered a more immediate burden. Here, 18,000 truckers, belonging to the three most powerful AFL unions, struck for higher wages and better working conditions. None of the other 24 locals went out, but the pickets of Local 807, the biggest union, were able to persuade many non-striking drivers to stop deliveries. In addition, some 10,000 drivers in New Jersey engaged in sympathy walkouts. Beginning with the original notice by the teamsters of their demands, which was made in June, the Mayor had endeavored to mediate their differences and find a formula satisfactory to both sides. He obtained a tentative acceptance from the drivers, but the employers flatly refused to go along. With the contract expiration on Aug. 31, the strike was on. The Mayor promptly appointed 2,000 emergency police to meet any violence that might ensue. He then called on Tobin, President of the International, to direct Local 807 to negotiate. This, Tobin refused to do, but by his directive the sympathy strikes by those not directly involved, were prevented. He then managed to persuade both sides to reopen negotiations. Eventually his persistence and the aid of Federal and state mediation experts brought about a settlement.

CREATION OF SPECIAL RELATIONS DIVISION

The prevalence of labor disputes with their consequent disruption of normal business activity and occasional violence between the contestants led the Mayor to set up machinery for avoiding these difficulties. Accordingly, in mid-September, he set up in the executive office a special Labor Relations Division under the direction of an experienced mediator, W. C. McGuire. The main function of the new agency is to apprehend the possibility of labor-management disputes long before they reach the crisis or strike stage, and by furthering negotiations between the parties to head off the strike before it starts. At the end of 1946, the Mayor was pleased to report that the division was functioning efficiently and had intervened successfully in 12 important disputes. The Mayor hoped to make this service to the city even more effective in the future.

AIR TRANSPORT PROBLEMS

In 1940, La Guardia Field was opened for business as the city's main air terminal. At the time it was felt that the new field would be adequate to meet the city's needs for some 15 years. To meet this contingency, blueprints were drawn and eventually work started on a new Idlewild Airport, adjacent to Jamaica Bay, to be about eight times the size of La Guardia Field. By the time the new O'Dwyer administration came into office, it had become apparent that La Guardia Field was rapidly approaching the saturation point. In addition, part of the field was gradually sinking into Flushing Bay, thus necessitating considerable reconstruction. Some $30,000,000 had been spent on Idlewild with another $40,000,000 committed, but numerous jurisdictional strikes and mounting construction costs made its completion a serious problem.

To meet some of the fiscal problems involved, Commissioner Moses proposed the creation of an independent Airport Authority which should operate existing and future airports on a self liquidating basis, its bonded indebtedness thus being placed outside the constitutional debt limit. The Authority would not be liable to the city for any funds already spent or committed, but title would revert to the municipality when all bonds had been liquidated. Although the subject of heated controversy, the proposal was embodied in legislation at Albany, and the Mayor appointed as members of the new agency Harry F. Guggenheim as chairman, Lieut. Gen. James E. Doolittle, and Laurence Rockefeller. Immediately the Authority ran into new difficulties. Thirteen air lines already held leases on accommodations at the new field. When demand was made that these be renegotiated in view of changed conditions, they refused and took the matter into the courts. The jurisdictional disputes continued. Two members of the Authority resigned.

In view of the apparent inability of the new agency to get underway, the Mayor appointed a new committee under City Engineer John Riedel to resurvey the problem. On the basis of their report, he then asked the Authority and also the New York Port Authority, which has an interest in all transport problems throughout the metropolitan area, to submit complete plans for the future financing and management of all the city's air facilities. Both agencies submitted their propositions at the end of the year, and considerable debate was expected before any final decision should be made. In the meantime the congestion at La Guardia Field was becoming even more acute.

PLANNING AND ZONING

The year 1946 was marked by several serious setbacks in the planning and zoning activities of the city. At the end of 1944, anticipating a tremendous post-war building boom, the City Planning Commission initiated and the Board of Estimate approved a new amendment to the zoning laws, limiting height and bulk of building in retail zones. This was designed to give greater light and air to all the areas in question as well as to minimize to some extent the traffic congestion resulting from new building. The new rule met with strenuous opposition from real estate interests and from four of the five Borough Presidents. Court proceedings were instituted, and in July 1946 the Court of Appeals held that, in view of the drastic limitations imposed and the amount of opposition on record, a 10-6 vote in the Board of Estimate was not sufficient to pass the amendment. Work was begun on a new amendment, but the Commission was handicapped by the Court's failure to indicate what type of restriction would be permitted without unanimous approval of the Board of Estimate, and it was generally felt that no effective regulation of the building boom could be inaugurated.

TRAFFIC CONTROL

Another serious controversy arose regarding the Commission's action in a particular phase of traffic control. The Board of Estimate had empowered the Commission to designate "congested" areas where future building of bus terminals would be prohibited. A prime factor in the ever increasing traffic congestion in mid-Manhattan had been the horde of interstate buses using the streets to reach their scattered terminals. It was presumed that the Commission would immediately designate the entire area east of Ninth Avenue as "congested." This would open the way for the Port Authority to erect a giant terminal west of Ninth Avenue, which would eventually be utilized by all interurban lines, thus removing some 80 per cent of that traffic from the streets. Largely owing to the strong opposition of the Greyhound Lines, which planned an expansion of its terminal near Pennsylvania Station, the Commission refused to make the required designation. Accordingly the Port Authority abandoned its original construction program. As the year progressed and traffic congestion increased, the Board of Estimate divested the Commission of its authority in the matter, and it was expected that very shortly after the turn of the year it would clear the way for a resumption of the Port Authority's original terminal plans.

An attempt at a temporary solution of the traffic problem was made by designating all the cross streets between Twenty-third and Fifty-ninth as express streets and banning all parking thereon. With the additions made to the police force, it was possible to make the ban largely effective. The result was a noticeable pickup in the speed of motor traffic, together with an equally noticeable increase in the charges of the various parking lots and garages in the area. The Commission sought to meet the problem by a grandiose plan of elevated express highways across the island and a number of giant municipal parking garages, but the city's fiscal condition at present makes any realization of this program a matter of the distant future.

HOUSING

In the matter of public housing also Mayor O'Dwyer found the post-war period a time of difficulty. In common with many other cities, New York found that Federal funds for low rent projects had been exhausted, and all such building was held up pending the passage of further Federal legislation. In July, the chairman of the City Housing Authority declared there was no money in sight for seven projects in the city. Where work was in progress, the necessity for tenant relocation, jurisdictional disputes, and building material shortages all presented difficulties. In addition the sharp rise in construction costs made it impossible to finance new projects in terms of the funds allocated to them before the end of hostilities.

Some small relief was provided for veterans by the acquisition and erection on vacant property of surplus government barracks and Quonset huts. Some private housing projects, notably Stuyvesant Town, the Metropolitan Life project along the East River, were progressing, but the shortage remained acute. In an attempt to obtain the rehabilitation of the many sub-standard buildings boarded up throughout the city, the administration provided for tax exemption on the improvements necessary in such cases and for deduction of the amortization of such costs from the owner's tax bill. Little advantage was taken of this new provision, and by the end of the year the Mayor was threatening to use the city's condemnation powers in order to put these old buildings to use.

FIRE AND POLICE DEPARTMENTS

The first post-war year brought relief to the overworked guardians of the city's public safety. As demobilization made it possible to recruit new men for the force, the three-platoon system for the Fire Department was again put into effect, and the extra tours for the police were abolished. Generous provision was made in the budget for additional personnel. So acute had been the shortage in the police force that the new members were put to work at once without the usual special police college training and before they could be uniformed.

Mayor O'Dwyer made it clear throughout the year that police administration would be as vigorous as that under La Guardia, particularly in regard to keeping large scale gambling and rackets from developing. Several intensified drives against the gamblers marked the year, and Commissioner Wallender showed no hesitation in replacing those officers who did not deliver.

A major shake-up in the Department resulted from certain sensational developments at the close of the year. In the course of the bitter election contest of Representative Marcantonio in the Harlem district, Joseph Scottareggio, a Republican captain, was beaten so badly that he died. The incident caused a terrific uproar, particularly on the part of Marcantonio's enemies who claimed he had instigated the attack. As the remainder of the year passed and no substantial results were forthcoming in apprehending the killers, the Mayor's dissatisfaction with police activity was brought to a head by the revelation that an attempt had been made to "fix" the playoff game for the professional football championship between Chicago and New York. With the complete backing of the Mayor, himself a former policeman, Commissioner Wallender effected a drastic reorganization of the entire department, including the forced retirement of many top ranking officers who were found to be physically unfit for efficient service. Their retirement opened the way for promotion of younger men with modern training and ideas.

POLITICS

The most striking feature, politically, of the year was the resurgence of Republican strength in the city. In the 1945 Mayoralty election, the Fusion candidate could secure only 302,000 votes on the Republican party line. Newbold Morris, a Republican running independently, polled 400,000 votes, many of them probably cast by independents. In 1946, the Republican gubernatorial candidate rolled up 1,179,528 votes, 60,000 more than Mayor O'Dwyer had received in his victory the year before. In addition, the Republicans captured five seats in the House of Representatives, long held by Democrats, and substantially increased their delegation in the state Senate and Assembly. This change in the fortunes of political warfare, however, does not serve to indicate that the Republicans could muster a similar vote against Mayor O'Dwyer in a municipal campaign. It serves, rather, to reemphasize the fact that Republican voters are more concerned with state and national politics than with local politics.

Both parties engaged in internal battles during the course of the year.

That attracting the most attention on the Republican side involved Congressman Joseph Clark Baldwin of the so-called "silk stocking" district. Baldwin was accused by his Republican leaders of being entirely too much of a "New Dealer" and unwilling to oppose the operations of the Democratic administration with true Republican vigor. State Senator Frederick Coudert, Jr. was designated the organization choice and, after a closely fought primary battle, obtained the nomination. Noticeable also was the failure of Vito Marcantonio to again secure the nominations of all parties, as he had done successfully in the past.

In the Democratic organization, its effectiveness was limited by the continuation of the internal battle of the previous year. An independent, or recalcitrant group, under the leadership of Frank Sampson, has been attempting to challenge the leadership in New York County of Edward Loughlin, and his chief supporters, Clarence Neal and Bert Stand. Unlike his predecessor, Mayor O'Dwyer felt it necessary to use his influence and power at City Hall in the attempt to refurbish the Democratic organization. While he had some success, he was handicapped by the fact that the opposition to Loughlin was not united, there being a rift between the leaders of those districts predominantly Italian and those of Irish background. At the close of the year, however, the Mayor had obtained the support of both state and national chairmen in his attempt to put Tammany in order. In Brooklyn, upon the death of leader Frank Kelly, the Mayor played a prominent part in determining his successor, throwing his support behind Borough President John Cashmore as against Edward Sutherland, an orthodox old-school politician. The Mayor has thus indicated his belief that the administrative chief of the city must be a political leader as well.

MUNICIPAL POLITICAL TRENDS

By Alfred Willoughby

Executive Secretary, National Municipal League

GROWTH OF COUNCIL-MANAGER GOVERNMENT

As municipal expenditures went higher and constantly larger budgets seemed inevitable under the pressure of inflationary influences, the largest number of municipalities in history sought greater efficiency through the adoption of the council-manager form of government. The manager plan was adopted by 80 cities in the United States, and another eight were added by Canada. This broke the previous record of 48 adoptions in 1921. In recent years and even during the difficult years of the depression when necessity forced greater efficiency in local public affairs, adoptions usually were under 30.

This was the most significant municipal political trend in 1946. Authorities on public administration, who are virtually unanimous in their opinion that the council-manager plan is the best which has been developed, predicted that it would become standard for American cities within the next generation.

MUNICIPALITIES ADOPTING THE MANAGER PLAN IN 1946

Alaska—Anchorage, Fairbanks.
California—Delano, Oxnard, Redding, Santa Monica, Vallejo.
Colorado—Glenwood Springs.
Connecticut—Hartford.
Florida—Cocoa, Delray Beach, Green Cove Springs, Safety Harbor, Winter Park.
Iowa—Charles City, Shenandoah.
Kansas—Emporia, Hutchinson, Junction City.
Kentucky—Nicholasville.
Maine—Bucksport, Clinton, Crystal, Freeport, Island Falls, Limestone, Madawaska, Monroe, New Canada Place, Oakfield, Orono, Rangley, Richmond, Ripley, Stonington.
Michigan—Fremont, Marquette, Saline, Ypsilanti.
Minnesota—Wayzata.
Missouri—Lebanon, Nevada.
Nevada—Elko.
New Hampshire—Conway.

New Jersey—Medford Lakes.
New Mexico—Tucumcari.
North Dakota—Fargo, Grand Forks.
Ohio—Osborn.
Oklahoma—Ada, Chickasha, Enid.
Oregon—Grants Pass, Pendleton, Roseburg, Salem, Springfield.
Pennsylvania—Hamburg, Mechanicsburg.
South Carolina—Lancaster, Spartanburg.
South Dakota—Aberdeen, Madison.
Tennessee—Paris.
Texas—Abilene, Bonham, Carrizo Springs, Clarksville, Edinburg, Odessa, Pelly, Waxahachie.
Utah—South Salt Lake.
Vermont—Cavendish.
Virginia—Falls Church, South Boston.
Washington—Moxee City.
Wisconsin—Fox Point, Madison.

Waco, Tex. voted to abandon the manager plan. Paducah, Ky.; Stockholm, Me.; Toledo, O.; El Reno, Okla.; Pittsburg, Tex.; Bennington and Hartford, Vt. voted at referenda to retain it. Proposals to adopt the plan were unsuccessful in 20 places, including Chattanooga, Tenn., where the plan lost by 612 votes after a spirited campaign.

The initiative for adoption of the manager plan is coming increasingly from mayors and former mayors and from members of city councils, who cite the growth of administrative responsibilities as the reason for putting affairs on a professional basis.

MADISON, WISCONSIN

Observers of political trends were surprised by the adoption of the council-manager plan by Madison, home of the state university and capital of Wisconsin. This surprise was owing to the fact that Madison had had a long record of honest, non-political government. There had been no scandal and no great dissatisfaction with the conduct of public affairs, which, as in other Wisconsin communities, had been on a non-partisan basis for more than a generation.

The change was voted in November, to take effect in the middle of 1947, after a study and educational campaign led by the League of Women Voters, with the cooperation of the *Wisconsin State Journal* (daily newspaper) and various civic groups. What particularly interested students of government was the fact that, in a quiet, orderly, clean campaign, the voters were able to recognize that administrative responsibility was too diffused among various boards, commissions, and independent officers.

AUGUSTA, GEORGIA

A citizens' revolt against a powerful political spoils machine in Augusta came to fruition during the year with the ousting of the Cracker Party which had held sway for 25 years, with little or no opposition, in the city and Richmond County.

The revolt was begun quietly five years previously by Berry Fleming, author of *Colonel Effingham's Raid* and the motion picture derived from it, when he returned to his home town after many years of absence. He organized the Augusta Citizens Union, which retained Dr. and Mrs. Thomas H. Reed of the National Municipal League's Consultant Service to make an administrative and financial survey of the city's government.

After the repeal of Georgia's poll tax in 1945, the Junior Chamber of Commerce conducted a "register and vote" campaign. Four times the normal number of votes were cast in the spring election, and the Crackers were overwhelmed, Independents being elected to the six offices at stake, three seats in the Richmond County Commission and three in the state legislature. In the fall election, the Independents also captured the City Council, thus gaining complete control of both city and county.

The consultants were promptly called back to make a survey of the county, to draft a new council-manager plan charter for the city and to prepare legislation to cleanse the government of bad practices. This survey included a joint city-county tax collection system, a non-partisan school board, and a modern public employee retirement system.

BOSTON

James Michael Curley remained mayor of Boston despite his conviction in a Federal court on the charge of using the mails to defraud. Pending appeal, he declined to resign. Early in the year, the attempt of civic leaders to obtain a basic change for the city was frustrated when the state legislature scuttled a bill which would have given Boston permission to vote on the question of adopting the council-manager plan with the proportional representation system of voting. A similar bill was introduced early in the 1947 legislature and a "Plan E for Boston Committee" was organized. "Liberty 1948" was the campaign slogan and the telephone number of the Committee's headquarters.

HARTFORD, CONNECTICUT

The people of Hartford, capital city of Connecticut, voted by more than two to one to replace its seriously diffused form of government with the council-manager plan. The new charter is subject to approval by the state legislature. Both political party organizations opposed the change and sought to confuse the voters with delaying tactics. After agreeing to put the question on the Nov. 5 ballot, the Board of Aldermen ordered a special election on Dec. 3. Despite the unpropitiousness of the period between Thanksgiving and Christmas for an election in which personalities were not involved, a substantial vote was cast.

The Citizens Charter Committee which spear-headed the campaign for the charter was led by William H. Mortensen, former mayor, who in 1945 had started the charter revision by appointing a special commission. Three other former mayors joined him in the campaign. The newspapers fought vigorously for the charter, and technical "ammunition" was prepared by the Governmental Research Institute, of which Leslie M. Gravlin is director.

In opposition there appeared the "Second Charter Oak Committee," a title reminiscent of the story of how Captain Wadsworth hid the Connecticut colonial charter in an oak tree in 1687. Under this banner, speakers from both parties campaigned and warned the voters "don't be managed." On the day of the referendum, the opponents complained of not having workers because they could not pay them. The proponents had the services of many volunteers, conducted a telephone drive, and brought out the vote.

TOLEDO, OHIO

The city charter of Toledo, providing a nine-man city council elected by proportional representation and a city manager, was upheld by a vote of 48,691 to 40,989 in the fourth referendum challenge since the charter was adopted in 1934. The proposal to revert to a 21-member council elected by single-member districts and the substitution of an elected mayor for an appointed city manager was defeated.

RICHMOND, VIRGINIA

By the unprecedented margin of more than four to one, Richmond, one of the few cities still having the old two-house city council which was common 50 years ago, voted to elect a commission to modernize its charter. Members of the commission indicated interest in the council-manager form of government.

ATHENS, TENNESSEE

Armed revolution flared in Athens, Tenn. in August, when, it was charged, the reigning political machine failed to insure an honest count of the ballots cast in the county election. A group of war veterans, forming the McMinn County Good Government League, had pledged citizens that their ballots would be "counted as cast." It was claimed that the well-intrenched political machine imported tough polling-place guards who roughed up the GI watchers, shot one, threw two in jail, and, an hour before the time for the polls to close, picked up the ballot boxes and carried them off to the county jail where they barricaded themselves. After a six-hour siege, shooting and the explosion of dynamite persuaded the "guardians of the peace" to surrender. County officials fled over the border, from which place of safety they tendered their resignations to the governor, and he appointed the GI candidates in their places after it was determined that they had scored a clear victory in the voting. The GIs swept the community clean of slot machines and other gambling devices, ordered an audit of the county's books, and announced their intention of setting up a non-partisan, businesslike operation with eventual adoption of the council-manager plan for both city and county.

CHICAGO

It looked very much like something new and different was coming up in the politics of the nation's second metropolis, something which may be quite unfamiliar in the memory of most living Chicagoans. Everything seemed to be happening at once. It was too early to say that the cleansing hand of reform was actually taking hold but as the year drew to a close there were these significant developments: Al Capone, who more than any other man had been responsible for Chicago's politico-crime alliance, had died at his palatial fortress-estate in Florida; the voters had declared overwhelmingly in favor of voting machines (and thus out of patience with political machines); Edward Joseph Kelly, long-time mayor and boss, was eased out of the machine's leadership and was dropped as a candidate to succeed himself in favor of a business man who had been noted chiefly for his steadfast opposition to the machinations of the organization. Martin Kennelly, self-made commercial success and head of van and warehouse companies, chosen to succeed Kelly as mayoralty candidate, is a civic reformer identified with the Chicago Crime Commission which for years has been catching the police in the acts of wrong-doing. He accepted the task of leading Democratic forces in an attempt to recoup their recent losses only if there would be no strings attached, and that was interpreted by the organization to mean an end to flagrant political abuses.

SEATTLE, WASHINGTON

A new charter was adopted by Seattle. It extended the term and increased the power of the mayor, established a new fiscal procedure, and made other improvements.

NEW ORLEANS

The New Orleans "commission-council" form of government was tightened and made more appropriate for effective administration by legislation which followed studies by the New Orleans Bureau of Governmental Research with the aid of outside experts. Mayor deLesseps S. Morrison, who the previous year had swept the last Huey Long henchman from office, made progress in instituting more efficient government.

BALTIMORE

The people of Baltimore voted in November to adopt a new "strong mayor" charter to replace their old basic document dating from 1898.

CENTRAL FALLS, RHODE ISLAND

A veterans' party, organized in Central Falls to combat gambling, vice, and political bossism, obtained control of the city council and sent its candidate to the State House of Representatives. Policies of the new party were determined by a weekly meeting along the lines of the old-fashioned town meeting.

JERSEY CITY

Mayor Frank Hague of Jersey City lost much of his waning power in state government and showed signs of weakening even in his own Hudson County. As a result of an election (with votes tallied on voting machines) which brought the famed "Hague majorities" in Jersey City to a new low, the boss found himself confronted for the third time in succession with an unfriendly governor. This meant practically the end of his already badly depleted state patronage list.

HOBOKEN, NEW JERSEY

One of Mayor Hague's friends, Mayor Bernard McFeely of Hoboken, was also in trouble. The mayor, his brother, chief of police Edward McFeely, and other McFeelys and Mc-

Feely henchmen found themselves under indictment by a Hudson County grand jury for alleged illegal acts of oppression against certain police officers who had petitioned for rights guaranteed by state law. The outraged policemen, together with the Hoboken League of Women Voters and the Independent Citizens League, thereupon gave an unprecedented beating to City Hall by forcing adoption of civil service by a referendum vote at the general election. Voting machines, used for the first time in Hoboken, were credited with having emboldened many voters to vote their convictions, without fear of reprisals following possible identification of paper ballots.

STEUBENVILLE, OHIO

A spectacular campaign against vice, started by a group of clergymen in Steubenville, quickly led to the organization of a Citizens League for Good Government. As in so many cities, the leaders of this League soon concluded that a 1947 campaign for a council-manager charter would be the best way to organize and consolidate for good government in Steubenville.

MUNICIPAL FUNCTIONS

By Herbert A. Simon
Associate Professor, Illinois Institute of Technology
and
Dorothea Pye Simon
Editorial Assistant, *The Municipal Year Book*

GENERAL

The year 1946 proved a year of many surprises for American cities. It had been widely predicted that, with the end of the war and the consequent reduction in Federal spending, a substantial deflation would set in. In anticipation of this, and in order to restore public works that had necessarily been neglected during the war, cities had generally planned for a high level of public works activity. Instead of deflation, the premature elimination of OPA controls and the continued pressure of unfilled demand produced a rapid rise in prices toward the end of the year; while continuing material and manpower shortages seriously impeded public works activities. City finances were hard pressed to provide needed salary increases, while at the same time there was wide concern as to how cities would meet the equally severe financial problems that will arise when and if a deflation follows the boom.

There were other problems faced by cities in 1946 that were not surprises. In particular, the severe housing crisis continued, with no signs of immediate relief at the year's end. Cities which had organized to cooperate with the Federal Government to combat the crisis were handicapped by the progressive weakening of Federal housing policy as the year wore on.

PERSONNEL ADMINISTRATION

Attention in the field of personnel administration focused during 1946 on the subjects of salaries, veterans' preference, and unionization of public employees. In none of these fields were there any striking departures from previous developments. The pressure of increasing living costs and competition from private industry has led, as in previous years, to numerous increases in salaries and wages of public employees. In most cases these increases have been on a temporary basis, and base pay rates have not generally been changed. Partly as a result of this, municipalities are still not competing on a favorable basis with private employers for the services of persons in professional and technical occupations.

Assisted by existing and new preference legislation, large numbers of veterans entered the public service during the year. Exact figures are not available for municipal employment, but in the Federal service over 50 per cent of the civilian employees at the end of the year were veterans. On the other hand, few municipalities appear to have undertaken positive recruitment programs to secure a fair share of the best talent among returning veterans for the public service. The unsatisfactory salary situation was also an important factor in hampering effective recruitment.

Aggregate municipal employment increased somewhat as positions, unfilled during the war, were filled. At the same time, large numbers of temporary appointees were separated from employment, and others were given permanent status on the basis of examinations or other qualifying procedures. Normal civil service procedures were reinstituted, and examinations were held on a large scale to establish eligible lists.

Union activity in the public service showed a decided increase. The State. County, and Municipal Workers of America and the United Federal Workers of America (both CIO) merged to form the United Public Workers of America. Strikes of public employees occurred in a number of cities, while several jurisdictions, including the Federal Government. passed legislation banning strikes of public employees and imposing penalties on strikers. Although city officials and courts rather consistently held to the position that strikes of public employees are illegal, wage demands of the strikers were met in a considerable number of instances.

There was considerable interest in in-service training programs for public employees. A number of cities established veterans' training programs under the vocational training provisions of the GI bill.

FINANCE

The end of 1946 found cities in a strong financial position, at least from the short-run point of view, but faced with serious long-term financial problems. Many cities had reduced and accumulated surpluses in anticipation of post-war public works programs. During 1946, these cities began to dig into their surpluses and to float new bond issues as the time to carry out these plans approached.

The most serious immediate crisis was the need to expand revenues in order to meet rising costs for materials and to grant wage and salary increases to public employees. The long-term importance of this problem will depend of course on whether prices will be stabilized at or near the new levels, or whether they will return at least part of the way to pre-war levels. Assessing officials, anticipating that at least part of the increase in real estate values may be permanent, have begun to revise assessments upward, but the discrepancy between controlled rentals, on the one hand, and building costs and sales prices on the other, makes it difficult to arrive at an equitable basis for adjustment.

Spurred by these conditions, cities have continued their search for new sources of revenue. Forty California cities, and Louisville, New Orleans, New York, and Seattle now have city sales taxes. Toledo and St. Louis joined Philadelphia in the establishment of income or payroll taxes. Other cities have imposed or increased cigarette taxes, occupational taxes, public utilities taxes, business license taxes, and service charges. New York City and Providence, R. I. imposed a hotel room rental tax. The Municipal Finance Officers' Association published a bulletin, *Actual Revenue Sources of Cities*.

In two states, the issue of state-collected locally shared taxes was carried to the voters. The voters of Arizona decided that a portion of the gas tax should be returned to units of local government; in Michigan, the constitution was amended to return part of the sales tax to municipalities and schools.

An increased interest was shown in finance administration in many cities. Particularly notable were the large number of cities that introduced improvements in their accounting systems. In the assessment field, there was continued great activity in in-service training, with programs being carried on in Maryland, Kentucky, Connecticut, Oklahoma, Minnesota, Wisconsin, New York, California, and the province of New Brunswick, among others.

PLANNING AND HOUSING

If necessity were really the mother of invention, 1945 and 1946 would have witnessed a startling development of planning activities in American cities. With cities on the brink of an unprecedented period of reconstruction, both of public works and of private structures, the need for guiding new developments into constructive channels offered planning opportunities of tremendous scope. While a very gratifying but slow improvement in both the quantity and quality of planning activity was seen in 1946, as in the preceding decade, cities as a whole still fell very far short of making full use of the opportunity that was presented them for planning their growth. A number of cities completed comprehensive plans started during the war; several cities made special studies for the development of shoreline and riverfront areas; others made, or brought up to date, civic center plans. Plans for particular community services, recreation, libraries, airports, and others were made in a number of communities. New planning commissions were created in at least 30 cities.

Traffic congestion has returned to the cities to a more serious extent than ever before. As a result, most planning commissions are greatly concerned with traffic and transit plans and plans for off-street parking facilities.

An encouraging development in the planning field is that, with a constantly increasing number of cities having comprehensive master plans, plans for specialized facilities and zoning plans as well are more and more being brought into relation with an over-all scheme for the community as a whole. For those cities that undertook comprehensive planning before or during the depression, their long-term thinking is now beginning to pay dividends in terms of correct location and design of specific public and private facilities.

Direct participation of cities in the national housing program was limited only when measured against the magnitude of over-all need. More than 600 cities established emergency housing committees in response to an appeal by the Federal Government. By April, 52 cities in Kentucky, Michigan, Ohio, and West Virginia alone had allocated funds for temporary housing. In most communities, revisions of the building code and zoning ordinance, and in some cases use of parking property for temporary housing, facilitated the construction program. With stronger Federal leadership, greater support by the cities for the housing program would undoubtedly have been forthcoming, but the year ended with the Wyatt program virtually scuttled and with the nation far short of the initial goal of 1,200,000 units to be started during the year.

PUBLIC WORKS

With the end of the war, many cities had prepared to undertake extensive programs of public works to rehabilitate facilities that it had not been possible to maintain and to help combat the deflation which it was assumed would follow rather quickly on the curtailment of Federal war spending. Events caused these plans to be greatly modified. An accelerated inflationary trend in costs, and the scarcity of key material items and certain types of skilled labor led many cities to curtail and postpone their public works programs. In spite of this reduction in planned activities, the volume of public construction contracts let in 1946 was some 79 per cent greater than in 1945. Owing to the need of conserving materials and labor for housing and other essential building construction, the Federal Government has requested states, counties, and cities to defer all but the most essential public works construction.

Federal legislation passed in 1946 made available to local governments financial assistance for several types of public works projects. The Federal Airport Act authorizes an aggregate expenditure of $500,000,000 over seven years and the Hospital Survey and Construction Act $375,000,000 over five years. The Anti-Pollution Bill, providing $100,000,000 for sewage plants, died in the House without action. There was little state legislation during the year, although California, Pennsylvania, and Washington allocated substantial sums to local governments for public works construction.

Among the administrative problems that received particular attention during the year were refuse disposal methods, municipal airports, and parking facilities. A number of new incinerator plants were built, while other cities turned to the sanitary fill method of disposal. Municipal airports taken over by the Federal Government during the war are being returned to the cities, with consequent problems of reconversion to civilian use. The problems of parking and traffic congestion have already been mentioned.

TRAFFIC SAFETY PROBLEMS

An encouraging aspect of the traffic safety picture was the motor vehicle fatality rate, which in July had dropped to 7.8 per 100,000,000 miles traveled, the lowest point on record However, with increasing total automobile mileage, a peak was reached in the number of fatalities in January and February 1946 when 52 per cent more were recorded than in the corresponding months of the previous year.

The President's Conference on Traffic Safety drew up an action program to be used by states and localities in handling their safety problems. The *Manual on Uniform Traffic Control Devices* was completely revised for the first time since 1935, and the Automotive Safety Foundation created a Uniform Laws Division to aid local officials in preparing codes. Wichita, Kan. won the National Safety Council's grand award for 1945. Detroit won the grand award in the National Pedestrian Protection Contest sponsored by the American Automobile Association.

Seattle, Wash. completed an origin and destination traffic survey to determine traffic needs. Such studies have been made for 57 metropolitan regions by state highway departments in cooperation with cities. The Traffic Division of the International Association of Chiefs of Police completed training of personnel and installation of approved techniques in three cities and carried on follow-up work in a score of others. Public education on the elements of traffic safety, driver-training schools, and work with the traffic patrol activities of the public schools were intensified in many places.

CRIME PREVENTION

Crime rates continued to climb, with murder and robbery showing the greatest increases: 31 per cent and 28 per cent, respectively (based on comparisons of the first six months of 1946 with 1945). Considerable attention was given to the problems of training, particularly of the newer men; in these programs use was made of men who had received instruction at the FBI school in Washington and of the facilities available at nearby colleges and universities. Shorter hours for policemen went into effect in a number of cities.

FIRES AND FIRE PREVENTION

Both fire losses and the number of large fires reached an all-time high. The loss figure was $562,000,000 as compared to $450,000,000 in 1945, and there were 200 fires involving losses in excess of $250,000. Three spectacular hotel fires, resulting in great loss of life, gave impetus to revision of fire codes relating to hotels. In a large number of cities the working hours of firemen were materially shortened, accompanied in many places by more liberal vacation and sick leave policies. Training continued to receive considerable attention. A number of cities instituted or reorganized their fire prevention services, although this function has been slow in returning to pre-war standards. Substantial progress was made by cities during the year in the revision of building and fire prevention codes.

PUBLIC WELFARE

Although employment remained at a high level during the year, an increased burden was placed upon public welfare agencies. A large part of this burden resulted from the reconversion from war to peace, with a consequent increase in the number of persons temporarily unemployed and requiring compensation and other help. Welfare agencies also played an important role in assisting veterans and their families with the problems of readjustment to civilian life.

Case loads in all categories increased during the year, but particularly in childrens' aid and general assistance. An added strain was placed upon welfare agency budgets by the need of increasing assistance grants to meet the higher cost of living. Increases in grants were substantial but by no means kept pace with rising prices. In spite of the return of many employees from the armed services, welfare agencies encountered serious difficulties in securing sufficient trained personnel to staff their expanded programs. Welfare legislation was adopted in only a few states, because most state legislatures were not in session. The Federal Government increased its financial assistance to welfare activities through its grant-in-aid programs.

PUBLIC HEALTH

Adoption of the constitution of the World Health Organization in July was one of the most significant public health developments of the year. An Interim Commission met in Switzerland in November to handle any urgent disease problem that may arise before the permanent organization is established. The 79th Congress authorized the development of a national hospital program and appropriated funds for a hospital survey and for construction of physical facilities. It also passed the National Mental Health Act which will establish hospital and laboratory facilities for research, and grants of $10,000,000 to the states and $1,000,000 for demonstrations and personnel to assist the states in research and training.

In Alabama a constitutional amendment authorizes the state or local governments to acquire and operate hospitals. The new charter of Hartford, Conn. provides for a combined health and welfare department. A number of additional cities enacted food and milk ordinances, and New Haven carried on a program of training for food-handlers. Oregon cities completed engineering plans for sewage disposal plants, and 12 Tennessee cities without public sewers developed plans for sewage treatment or disposal plants. Indianapolis adopted a new air pollution ordinance. Dayton and Columbus, O., undertook analysis of their health needs. Posey County and the city of Evansville, Ind., inaugurated a joint county-city health department.

RECREATION

The greatest swing toward the separate recreation department—and in many cases, unfortunately, separate commissions—in any one-year period was shown in 1946. Sixty-two cities established recreation commissions or boards, 10 cities advisory boards, and 40 cities recreation departments. In Cleveland the city council and board of education created a recreation commission by joint agreement. New Orleans has combined the recreation functions of six agencies into one recreation department. Texarkana, Tex. and Texarkana, Ark. created a single park and recreation committee for the two municipalities; and Baltimore combined its park, recreation, and music work under a recreation and park board.

Interest waned in the establishment of new special youth centers, and greater attention was given to broadening activity programs, and to securing increased youth participation in program planning. Increases in recreation budgets were sufficient in many cities for both salary increases and significant increases in services. Special recreation tax levies were voted in 20 cities. Greater concern for community use as well as school use of school buildings and outdoor areas was in evidence in the planning of new school facilities, notably in New York and Los Angeles; and provision for recreation is included in much planning of new residential areas. Long-range recreation planning studies were inaugurated or completed in many cities, including Los Angeles, Seattle, Norfolk, Princeton, and Tacoma.

EDUCATION AND LIBRARIES

In the field of education the year 1946 was marked on the one hand by greatly increased discussion of schools and school problems, and on the other, by an increasingly acute shortage of well-trained teachers and by continued inadequacy of financing. Many teachers drained off by the armed forces and by war industries are not returning to the teaching profession, and the most talented young people are not now training to be teachers largely because of inadequate salaries. Strikes and threats of strikes by teachers in some jurisdictions were another indication of inadequate salaries. One step toward the alleviation of this condition was taken by the voters of California who, by initiative in the November election, specified $2,400 as the minimum salary for a teacher. Michigan, Oklahoma, and Oregon increased state aid for education. By the end of the year the teacher shortage and the salary problem had attracted nationwide public attention, and substantial increases in salary schedules were in prospect in a large number of states and cities.

The Federal Government gave considerable aid to education by increasing appropriations for vocational and extension education, by extension of the Lanham Act, by authorizing the President to accept membership in UNESCO, and by providing funds for international exchange of students. However, no progress was made in the direction of Federal aid to equalize educational opportunities or to aid communities in the construction of schools. College enrollments showed an increase of 2,000,000 (50 per cent over the previous peak), with veterans making up a large proportion of enrolled students.

Manpower shortages were a major problem of libraries, too, although the outlook was brighter because of the greatly increased enrollments in library schools and advances in the salary level of librarians. A number of states increased their financial support for both rural and city libraries, and local library revenues were greater. Special attention was given by library administrators to developing and promoting the post-war plans formulated during and after the war. Adult education activities, especially in the fields of current affairs and the "great books," continued to expand.

ADMINISTRATIVE ORGANIZATION

The most striking development in 1946 in municipal organization was the adoption, by the record number of 76 cities, of council-manager government. This brought to 689 the total number of cities in the United States operating under the council-manager form. The establishment of new planning commissions and of recreation departments in a larger number of communities has already been mentioned. The idea that new activities should be closely integrated with the existing city government has not yet taken root in many communities, as evidenced by the number of cases in which the new agencies were created as independent commissions.

Intermunicipal cooperation continues as the most popular solution to the problem of metropolitan organization. Numerous cooperative agreements were reported between cities, or between cities and counties, for fire, police, health, recreation, and utility services. A few new special districts were created, but there was little other organic change in the structure of metropolitan government.

FEDERAL, STATE, LOCAL RELATIONS

The cities were reminded again and again, as they faced the several problems enumerated above, that they are creatures of the state, limited as to their legal powers and fiscal capacities. In housing, in meeting the teacher-salary crisis, in their general personnel and revenue problems, it was clear that municipal policies would have to be geared closely to those of the state and Federal governments, and would often depend upon the availability of financial assistance from these other governmental authorities. It was encouraging, therefore, that as the year ended a committee of the Council of State Governments issued a report on State-Local-Relations, outlining a constructive policy for state legislatures in their relations to municipalities. The report, which urges states to "(a) grant greater powers to local units; (b) subject these powers to flexible administrative supervision; (c) assist localities to secure stable and adequate revenues; and (d) foster the enlargement and consolidation of local governments," may well form the basis for much needed cooperation between the states and their cities—cooperation that has not always existed in the past. Municipal officials could ask no more than that the state governments undertake to carry out this program which their own representatives have now formulated.

PERIODICAL PUBLICATIONS

American City
470 Fourth Ave., New York City.
Municipal Finance
1313 East 60th Street, Chicago.
National Municipal Review
299 Broadway, New York City.
Public Management
1313 East 60th Street, Chicago.
Public Works
310 East 45th Street, New York City.
Sewage Works Journal
24 W. 40th Street, New York City.
Water Works and Sewerage
155 East 44th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Civic Assn., 901 Union Trust Bldg., Washington, D. C.
American Municipal Assn., 1313 E. 60th St., Chicago, Ill.
American Public Works Assn., 1313 East 60th Street, Chicago.
Government Research Assn., 5135 Cass Ave., Detroit, Mich.
Institute of Local and State Government, University of Pennsylvania, Philadelphia.
Institute of Public Administration, 684 Park Ave., New York City.
International City Managers' Assn., 1313 E. 60th St., Chicago, Ill.
National Civic Federation, 112 Park Ave., New York City.
National Civil Service League, 67 W. 44th Street, New York City.
National Municipal League, 299 Broadway, New York City.
United States Conference of Mayors, 730 Jackson Pl., N.W., Washington, D. C.

DIVISION VI

TERRITORIES AND SPHERES OF AMERICAN INFLUENCE

ALASKA

By Ernest Gruening
Governor of Alaska

AGRICULTURE

The Alaska Rural Rehabilitation Corporation, with headquarters at Palmer, has general administration over 140 farms with a total of about 12,000 acres, of which approximately 8,000 are under cultivation. During 1946 the Corporation continued to function by clearing land and assisting tract owners with loans for real estate development. These loans were for converting barns to conform with Territorial Health specifications for Grade A milk production, silos, or for enlarging poultry houses. It also established a new policy of making outright sales of land tracts to *bona fide* farmers, either on a cash basis or with a down payment of at least 25 per cent with the remainder on amortization payments running over 15 years with interest at 3 per cent per annum on unpaid balances. Several veterans of the Second World War have made applications to the Farm Security Administration to purchase corporation tracts. During the crop year of 1945, 1,243 tons of potatoes were marketed, 1,418 crates of head lettuce, 14,781 pounds of carrots, 8,368 pounds of rutabagas, 21,624 pounds of radishes, 16,279 bunches of radishes, 59,169 pounds of celery, 74,597 pounds of cabbage, and 396 pounds of peas. There were produced 2,131,594 pounds of Grade A and B milk in the same year.

EDUCATION

Schools within incorporated cities and incorporated school districts and rural schools are provided for Alaska's children of both white and mixed blood, for whom education is compulsory between the ages of 7 and 16, inclusive. In the 1945-46 school year, there were 66 public elementary schools in operation, employing 237 teachers and enrolling 6,452 pupils; 24 public senior high schools had a student enrollment of 1,553 with 118 teachers employed. Elementary school teachers received an average yearly salary of $2,514; senior high school teachers, $2,624. The Territorial public schools are under the general supervision of a Territorial Board of Education, with the Commissioner of Education as Executive Officer. Graduation from a three-year standard normal school or its equivalent is a prerequisite for the elementary teacher's certificate in Alaska. High school teachers must be graduates of standard four-year colleges and must have completed a minimum of 15 semester hours of education.

Additional educational facilities for native children are provided by the Alaska Native Service, Department of the Interior.

The University of Alaska, located at College, Alaska, offers four-year courses in agriculture, arts and letters, business administration, chemistry, civil engineering, education, general science, home economics, mining, and pre-medicine.

FINANCE

The condition of the Territorial Treasury for the year ended June 30, 1946, was as follows:

Balance of Cash in Banks, July 1, 1945	$ 1,656,582.00
Less Outstanding Warrants	248,737.75
Net Cash Balance on Hand, July 1, 1945	1,407,844.25
Receipts July 1, 1945, to June 30, 1946	3,512,533.12
Disbursements July 1, 1945, to June 30, 1946	3,999,008.34
Net Cash Balance June 30, 1946	921,369.03

The combined resources of Territorial and national banks on June 30, 1946, were as follows:

Capital	$ 1,145,000.00
Surplus and Net Undivided Profits	2,347,125.77
Deposits	55,233,627.56

Totals for the previous year were:

Capital	$ 1,035,000.00
Surplus and Net Undivided Profits	2,208,408.27
Deposits	55,331,987.10

FISHERIES

Alaska fisheries products in 1945 totaled 320,498,505 pounds with a wholesale value of $58,926,269.00, a reduction from the previous year of about three per cent in quantity and seven per cent in value.

For the third successive season, the canned salmon industry was operated under a wartime program sponsored by the Office of the Coordinator of Fisheries to permit greater utilization of available labor, materials, and shipping facilities. The total number of salmon of all kinds taken in 1945 was 77,971,593, as compared with 72,429,162 taken in 1944. The number of cases packed was 4,354,569 valued at $44,757,680. Compared with the 1944 pack, the output showed a decrease of 11 per cent in quantity and over 12 per cent in value. Ninety-six canneries were operated in 1945, including three floating plants, an increase of four plants over the preceding year. A total of 23,836 persons was engaged in the commercial fisheries of Alaska in 1945. Twenty-three herring plants were operated as compared with 17 in 1944. A total of 462 persons was engaged primarily in herring fishery operations during the 1945 season. The total value of the herring products was $2,973,500, an increase of about 20 per cent in volume and 21 per cent in value over the preceding year. The total value of halibut landings at Alaskan and British Columbia ports was $3,547,719.

FORESTS

The Chugach National Forest, located in the Prince William Sound region and Kenai Peninsula, and the Tongass National Forest, covering the greater part of southeastern Alaska, comprise the national forest system of Alaska. Their combined area is 20,850,000 acres. All national forest resources are available for use. Standing timber can be purchased and removed for use by local industries and individuals under specified forestry restrictions. Land classified as chiefly valuable for agriculture, mining, industrial enterprises, and townsites can be patented. Areas needed for water power development, fox farming, and other special purposes may be leased. The total estimated timber volume is 84,700,000,000 board feet, and the average volume per acre of the commercial timber stands is about 26,000 board feet. Total net receipts on the Alaska national forests for timber stumpage and for the several classes of land use during the last fiscal year was $55,691.40. Most of the timber products were utilized by the military forces. Twenty-five per cent of the gross receipts are turned over to the Territory for schools and roads. Ten per cent of all receipts are made available to the Forest Service for road and trail building.

FURS

The number of fur seal skins taken at the Pribilof Islands in 1945 was 76,964. The census of the seal herd as of Aug. 10, 1945, showed a total of 3,155,268 animals in the herd, an increase of 7.11 per cent over the number computed in 1944. During the fiscal year 1946, two public auction sales of fur-seal skins were held at St. Louis, Mo., during which 51,44 were sold. Gross receipts from these sales were $4,031,627.50.

A total of all kinds of furs produced, not including those taken on the Pribilof Islands, was 223,173, valued at $1,550,724. At the top of the list is mink, 31,339 skins selling at $564,102; second, 9,553 beaver skins bringing $286,590; third, muskrats with 152,542 pelts selling at $102,256 Owing to marten having been closed over most of the Territory, only 45 marten were trapped and sold, bringing $27,180. Other furs ranked in the following order: red foxes, lynx, blue foxes, otter, cross foxes, silver foxes ermine, wolf, coyote, polar bears, wolverines, and black bears.

HEALTH

The Territorial Department of Health is comprised of the following divisions and service units: Marine Health Unit, Mobile Health Unit. Public Health Nursing Services, Health Education Unit, Tuberculosis Control Division, Division of Sanitation and Engineering, Division of Public Health Laboratories, and Division of Maternal and Child Health and Crippled Children's Service. The most recently created division of the Health Department is the Tuberculosis Control Division. This was created in January 1946, and an appropriation of $250,000 was made for its use by the Special Session of the Territorial Legislature in March. The program consists of hospitalization of patients. Incidence of tuberculosis is nine times as high in Alaska as in the United States. A tuberculosis education program has been inaugurated throughout the entire Territory, and a universal system of chest x-rays is under way. New tuberculosis sanatoria have been opened in Seward and Skagway.

MINERALS

Before the war, gold mining amounted to over 90 per cent of the total mineral production of Alaska. The outbreak of hostilities in the Second World War put a virtual end to gold mining, culminating in the gold closing order for gold mining in the United States (though not in Canada) of October 1942, which suspended all Alaska gold mining with the exception of a few placer mining operations and one hard rock mine—the Alaska-Juneau. The close of the war has brought only a very slight resumption of this activity, owing to increased costs, unsettled industrial conditions, and the difficulty of securing an adequate labor supply. Six months before Pearl Harbor, the United States Bureau of Mines began the investigation of strategic minerals in Alaska. Since that date (Dec. 7, 1941), 46 major development projects have been completed. Favorable reports from 29 of these projects resulted in 13 mines that produced during the war. They include two antimony, one chromite, two mercury, two tungsten, one asbestos, and five coal mines. One hundred and twenty-six mineral examinations were made. The Bureau of Mines also conducted extensive investigations of the deposits of other minerals such as tin, iron, copper, lead, and zinc. The discovery of oil seeps in the Arctic slope is of particular and timely importance. The Navy and other interested agencies are conducting drilling operations in this hitherto unvisited area.

REINDEER

Reindeer constitute the only agricultural resource in western Alaska, an area about three times the size of Illinois. The Reindeer Service Field Headquarters are situated at Nome, and the Reindeer Supervisor is directly responsible to the General Superintendent of the Alaska Native Service at Juneau. The Service has inaugurated a policy of taking the reindeer as rapidly as possible out of the hands of present company organizations and placing the herds in the hands of private individuals. In 1945, 4,874 deer were slaughtered and processed through the butchering and refrigeration plant operated by the

Service on Nunivak Island at Mekoryuk.

TRANSPORTATION

The Alaska Railroad furnishes a year-round passenger and freight service between Seward and Fairbanks, Anchorage and Whittier, and to the coal mines in the Matanuska Valley. Passengers carried totaled 60,238, with passenger revenue of $338,128.46. Passenger miles totaled 6,620,911, or 28.6 per cent under 1945. The revenue from freight hauled was $4,432,633.12.

Alaska is served by five steamship companies: Alaska Steamship Co., Northland Transportation Co. and Alaska Transportation Co. of Seattle, the Canadian National Steamships of Vancouver, B. C., and Canadian Pacific Railway Co. of Victoria, B. C.

Commercial aviation is one of the major factors in the industrial life of Alaska. The number of passengers flown during the year ended June 30, 1946, totaled 97,464; passenger miles flown, 26,234,835; mail and freight carried, 6,053,258 pounds.

HAWAII

By Ingram M. Stainback
Governor of Hawaii

GEOGRAPHICAL

The Territory of Hawaii consists of eight inhabited islands in the Central Pacific Ocean some 2,000 miles west of Lower California. These islands which are of volcanic origin have a land area of 6,438 square miles, only slightly less than the combined areas of the states of Delaware, Connecticut, and Rhode Island. From southeast to northwest, the group is made up of Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, Kauai and Niihau. Included also is the island of Midway and an archipelago of rocks, reefs, and shoals extending 1,100 miles northwestward from Niihau; likewise Palmyra, a coral atoll 960 miles south of Oahu, is a part of the City and County of Honolulu.

HISTORICAL DEVELOPMENT

The social and economic development of Hawaii has been somewhat comparable to the development of the upper Mississippi Valley and the western part of the United States. Settlers from New England became teachers and traders in Hawaii long before similar groups settled in California. These early leaders cooperated with Hawaiian monarchs and their advisors in establishing a form of constitutional government. By the time the islands were annexed in 1898 the government and institutions were distinctively American. By training and experience the people were ready for territorial status. Now, 47 years later, they are emphasizing their desire and readiness for statehood.

SOCIAL AND ECONOMIC

Since assuming territorial status Hawaii has enacted legislation comparable to that of mainland states noted for their efficiency in government, particularly in the fields of public school education, public welfare service, health and the control of communicable diseases, tax structure, and labor-industrial relations. Hawaii is the only territory or state, with the exception of Wisconsin, that has extended collective bargaining to agricultural laborers.

During the last year of the war, the Office of War Information established headquarters in Honolulu for large-scale Central Pacific radio and leaflet operations as a part of the propaganda attack against the Japanese enemy. That part of this program which depended on a knowledge of the Japanese language was performed largely by a staff of Americans of Japanese ancestry recruited in Hawaii.

The territorial government continued to question the legality of the sentences imposed on civilians by the previously existing military courts under terms of the suspension of the writ of habeas corpus. This position was later vindicated by decisions of the Supreme Court of the United States.

In the seventh war loan drive, Hawaii exceeded its quota and retained its record of being the only territory or state that has exceeded every quota assigned to it.

Automobiles increased by 1,523 during the year, bringing the total registrations in the Islands in 1945 to 73,818. This increase was almost entirely in the City and County of Honolulu where the ratio is about one car to every five residents.

STATEHOOD MOVEMENT

After 45 years as a Territory, Hawaii is now closer to achieving statehood than it has been at any time since annexation as an integral part of the United States. Plans were laid late in 1945 by territorial officials for a visit to Hawaii of the Subcommittee of the Committee on Territories of the House of Representatives to study the question of statehood. This Subcommittee reported later that Hawaii is ready for statehood. Interior Secretary Harold L. Ickes urged in Washington that Hawaii be admitted to statehood because of its excellent war record.

AREA AND POPULATION

For administrative purposes the Territory is divided into four counties: City and County of Honolulu, comprising the Island of Oahu (area 604 sq. m., estimated population 1945, 348,045); County of Hawaii, comprising the Island of Hawaii (area 4,030 sq. m., population 70,049); County of Maui, comprising the Islands of Maui, Lanai, Kahoolawe, and all of Molokai, except the leper settlement (area 1,164 sq. m., population 51,378); County of Kauai, comprising the Islands of Kauai and Niihau (area 627 sq. m., population 32,650). The total area is 6,435 square miles with a population of 502,122. The principal cities are Honolulu, the capital, situated on the Island of Oahu, population 261,033, and Hilo, on the Island of Hawaii, population 28,303.

The population of the Territory grew from 423,330 in 1940 to an estimated 502,122 in 1945, exclusive of military and naval personnel. The population is greater than that of any state at the time of admission to the Union, with the exception of Oklahoma. As compared with the several states at the time of the 1940 census, Hawaii exceeded the population of the states of Nevada, Wyoming, Delaware, and Vermont, and its population was comparable to that of four other states, New Hampshire, Arizona, Idaho, and New Mexico. The racial origin of this population, in addition to the native Hawaiians and the Caucasians from the mainland, is Japanese, Chinese, Korean, Filipino, Portuguese. However, 86 per cent of the population is comprised of citizens of the United States. Filipino nationals make up a large part of the 14 per cent of non-citizen residents.

GOVERNMENT

During the greater part of the nineteenth century the islands formed an independent kingdom. In 1893 the reigning monarch, Queen Liliuokalani, was deposed, and a provisional Republic was proclaimed. Pursuant to the request of the people of Hawaii, expressed through the legislative branch of the Republic, and a resolution of the United States Congress approved July 7, 1898, the islands were formally annexed to the United States on Aug. 12, 1898. The Organic Act, under which Hawaii is governed, was approved April 30, 1900. Since that date Hawaii has been a full-fledged territory and an integral part of the United States.

The territorial government has the traditional divisions—executive, legislative and judicial—and is similar in form and spirit to that of each American Territory before it was admitted to statehood. Hawaii has also the usual Delegate to Congress who serves as a member of the House of Representatives without the right to vote.

TRADE AND INDUSTRY

Commercial products shipped to the mainland United States were sugar, approximate value $58,957,025; canned pineapples and pineapple juice, $26,935,494; and coffee, $1,091,000. Hawaii ranked fifth among customers of continental United States, having purchases amounting to $104,302.531.

Overseas vessels arriving and departing from ports of the Territory in 1945 numbered 2,334. This shipping amounted to 15,564,909 gross tons, or 9,281,661 net tons. Customs receipts for the year were $1,552,586 compared to $1,319,661 for 1944.

The Hawaiian Airlines, Limited began its sixteenth year of commercial air service, and transported 159.803 passengers a total of 1,207,541 air miles in 1945 as compared with 110,242 passengers flown a total of 947,588 miles in 1944.

Building permits in 1945 for all kinds of construction in Honolulu totaled 1,858, with an estimated value of $11,817,863. New construction had a value of $8,194,928, compared with the 1944 volume of $7,141,400. There were estimated to be 58,000 families in Honolulu in June, 1945, and only 45,376 dwelling units, thus indicating a shortage of 12,624 dwelling units.

Reports of business and official agencies at the end of the year showed business to be in a strong financial position. As of December. 1945, 36,875 corporations, firms or individuals were engaged in 54,412 different enterprises as employers, or self-employers. Wages paid in 1945 were the highest in the history of Hawaii, amounting to $379,362,115, compared with $318,258,500, in 1944

Postal receipts in Honolulu for 1945 were $21,994,754, an increase of $6,996,192 over 1944.

Internal revenue receipts for the fiscal year ended June 30, 1945. amounted to $173,999,227, an increase over the previous year of more than $23,217,000.

SUGAR

The aggregate value of the three leading agricultural products of the islands—sugar, pineapples, and coffee—exceeds $112,000,000. First in importance of Hawaii's crops is sugar. The 35 sugar companies operating in the Territory are capitalized for approximately $175,000,000. Some 16,000 stockholders in 1945 received dividends totaling $6,036,845. About half of the land planted to sugar-cane is owned by the plantation companies; the remainder is leased from estates, the Territorial Government, and from individuals. The sugar crop for 1945 totaled 799,427 short tons, valued at $58,957,025. Hawaii normally supplies between 12 and 14 per cent of the national needs.

The 1945 crop was the lowest for 18 years, netting 821,216 tons from the 103,173 acres harvested, a yield of nearly eight tons per acre. In 1944 the yield from 109,522 acres harvested was 874,947 tons. There were 27,746 persons employed on sugar plantations as of December, 1945. The drop in Hawaiian production resulted largely from wartime labor shortages. Sugar cane acreage dropped from 235,110 acres in 1940 to 211,311 in 1945. The unskilled employees on the plantations dropped from 35,062 in 1940 to 20,806 in 1945.

PINEAPPLES

Eight pineapple companies in Hawaii operate 12 plantations and nine canneries. They produce about 90 per cent of the world's supply. Approximately 63,000 acres of land is utilized for pineapple production. Pineapple companies, exclusive of the canneries, employ about 14,750 workers. The industry's manufacturing operations employ 11,300 workers. These figures exclude employees of the harvesting season from June to September, when an estimated 35,000 persons are employed. School children provided much of the needed harvest labor during the war years. The total pack of eight member companies of the Pineapple Growers Association of Hawaii for the fiscal year 1945 was 17,922,629 cases. During the calendar year 1945, a total of 305,895,784 pounds of canned pineapple and canned pineapple juice, valued at $26,935,494, was shipped to the mainland.

COFFEE

Coffee production for the crop year 1945 was 7,656,048 green pounds compared to 6,768,953 pounds in 1944. Coffee ranks third in Hawaii's exports, with an approximate value, in 1945, of $1,091,000. Commercial production is confined to about 4,000 acres in the Kona area on the Island of Hawaii.

FINANCES

Territorial tax collections on business and otherwise for the fiscal year ended June 30, 1945, amounted to $39,842,855, as compared to $39,617,709 for the previous year. Cash on hand and in banks on June 30, 1945 amounted to $35,390,848, as compared with $35,593,357 for 1944.

The gross bonded indebtedness, as of Dec. 31, 1945, amounted to $16,520,000. The net bonded indebtedness, after the deduction of sinking fund assets of $7,151,344, amounted to $9,368,656, as compared with $18,301,633 on Dec. 31, 1944, a decrease of $8,932,977.

The net assessed valuation of real property for the calendar year 1945 totaled $407,755,486, as compared with $407,270,321 for the year 1944, an increase of $485,165. The tax rate for $1,000 assessed valuation for real property in 1945 was established for the City and County of Honolulu at $27.26; for the County of Maui. $34.04; for the County of Hawaii, $43.60; and for the County of Kauai. $37.76. The net assessed valuation of personal property for the calendar year 1945 totaled $82,756,199, as compared with the figure for 1944 of $75,272,408, an increase of $7,483,791.

Total deposits in the 42 banks and 30 branches in Hawaii on June 30, 1945, amounted to $533,492,020, as compared with $461,095,093 on June 30, 1944, an increase of $72,396,929.

The total internal revenue collections in Hawaii for the fiscal year 1945 exceeded the total collections of any one of 14 states, being $173,999,227.

ARMED FORCES

Naval personnel of the 14th Naval District averaged 43,200 officers and enlisted men during 1945. Civilian employees in the district numbered 33,500. Estimated expenditures for the district for 1945 were $148,000,000. Fleet purchasing units expended about $36,000,000 in Hawaii for provisions and supplies. About half of the estimated $215,000,000 paid to Naval personnel in the Hawaiian area in 1945 is estimated to have been spent in Hawaii.

Army personnel in the Hawaiian area averaged more than 135,000 in 1945. Total military payroll for the period was $109,088,936.85. The average number of civilian employees of the War Department was 26,668. Gross annual pay of these employees was $72,186,508. Local purchases by the Army Exchange Service amounted to $5,322,780 during 1945. Total local expenditures by the Army in 1945 were estimated to be $221,027,347. Army installations in the Hawaiian Islands were valued at $277,093,819.

PUERTO RICO

By Max A. Egloff

Director of Information of Puerto Rico

DESCRIPTIVE

The Island of Puerto Rico is the smallest and most easterly of the four Greater Antilles. These islands, together with the Lesser Antilles, form a chain of some 200 islands which reach from the tip of Florida to the northeast coast of Venezuela. San

Juan, capital of Puerto Rico, is about 1,600 land miles southeast of New York and 1,000 miles southeast of Florida.

Puerto Rico is approximately 100 miles long by 35 miles wide. With its three small satellite islands of Vieques, Culebra, and Mona, its territory contains 3,435 square miles, almost three-quarters of which is in the mountainous interior. Puerto Rico is in the subtropics, but continuous trade winds give it a moderate all year temperature averaging 76°F. Rainfall is heavy throughout the year except in certain sections on the south coast where crops are grown under irrigation.

HISTORICAL

The Island was discovered by Columbus Nov. 19, 1493, on his second voyage. In 1508 it was conquered by the Spaniards and its Indian name "Boriquen" changed to Puerto Rico (Rich Port). Puerto Rico continued under Spanish rule for almost 400 years. It was ceded to the United States on Dec. 10, 1898, at the end of the Spanish-American War.

In 1946, Puerto Rico had an estimated population of 2,101,698. San Juan on the north coast is the largest city with an estimated population in July 1946 of 215,447. The second and third largest cities are Ponce on the south coast with an estimated population of 115,701 and Mayaguez at the western end of the Island, with an estimated 86,341 inhabitants.

Spanish continues to be the mother tongue of Puerto Rico, although English is taught in the schools. The official language is English, and most commercial correspondence with the mainland is carried on in English. The language problem remains a very serious one. A bill providing that teaching be done in Spanish with English as a required subject was passed by the 1946 legislature over the Governor's veto and sent to the President as required in the Organic Act who upheld the veto.

GOVERNMENT

The Island is governed under the Act of Congress of March 2, 1917, known as the Organic Act, and subsequent amendments. The Governor is appointed by the President of the United States by and with the consent of the Senate.

The Act provides for seven departments—Justice, Health, Interior, Education, Treasury, Agriculture and Commerce, and Labor—and the Auditor's office. The Attorney General, who is head of the Department of Justice, and the Commissioner of Education are appointed by the President by and with the consent of the United States Senate. The Auditor is appointed by the President but is not subject to Senate confirmation. The Commissioners heading the other Departments are appointed by the Governor with the advice and consent of the Insular Senate. The heads of the Departments form the Executive Council.

Since 1942, during the governorship of Rexford G. Tugwell, this Council has been composed entirely of Puerto Ricans. On July 25, 1946, President Truman nominated Jesus T. Pinero, then Resident Commissioner, to the Governorship of the Island. Pinero was inaugurated Governor on Sept. 3, 1946, marking the first time, under either Spanish or United States jurisdiction, that a native-born Puerto Rican has been named Governor.

Puerto Ricans elect their own legislature which is made up of 19 Senators and 39 Representatives. They also elect a Resident Commissioner to the United States Congress who may participate in debate and be a member of various committees but who has no vote. Elections are held at four-year intervals and on the same day as national elections. The Island is divided into 77 municipalities, each with its own Mayor and Council whose acts are subject to review by the Executive Council, made up of the Governor, Attorney General, Commissioners of Health, Interior, Agriculture, Commerce, Finance and Labor. In the November 1944 elections, the Popular Democratic Party, under the leadership of Luis Munoz Marin, President of the Senate of Puerto Rico, gained overwhelming control of both houses of the legislature. Governor Pinero is a member of this party, as is Dr. A. Fernos Isern, who was designated to take Governor Pinero's place as Resident Commissioner.

JUDICIARY

The judiciary system consists of the Insular Supreme Court, the District Court of the United States for Puerto Rico, the district and municipal courts, and justices of the peace. Appeals may be made in certain cases to appropriate higher courts, including the Supreme Court of the United States. The Chief Justice and four Associate Justices of the Supreme Court of Puerto Rico are appointed by the President, by and with the consent of the U. S. Senate. Statutory laws of the United States, not locally inapplicable, are in effect in Puerto Rico unless otherwise provided.

REPRESENTATION

Puerto Ricans are American citizens but may vote in Presidential elections only if they are residents of the mainland. They send no representatives to Congress but are represented in Washington by a popularly elected Resident Commissioner who has the right to debate, hold committee assignments, and introduce bills, but does not have the right to vote.

POLITICAL STATUS

Puerto Rico has been held by the Supreme Court to be unincorporated territory of the United States—in other words, "belonging to but not a part of." The present political status is unsatisfactory to Puerto Ricans. In October 1945, President Truman recommended that, since the existing form of government in Puerto Rico seemed unsatisfactory to a large number of its inhabitants, Congress should enact legislation to submit various alternatives to the Puerto Rican people, in order to ascertain what the people themselves desire most for their political future. The President asked the Congress to authorize for the Island a plebiscite to indicate preference among the following forms of political status: (1) the right of the Puerto Ricans to elect their own Governor with a wider measure of local self-government, (2) statehood, (3) complete independence, and (4) a dominion form of government.

FEDERAL ACTIVITIES IN PUERTO RICO

Almost all major Federal government agencies include Puerto Rico in their fields of activity, and many of the war agencies also operate there. The most important exception is the Social Security Act. Only the Child Welfare and Public Health sections operate in the Island. The Federal Government has occasionally provided special programs of which the most outstanding was the Puerto Rican Reconstruction Administration, established in 1942 to promote the industrial development of the Island.

Administrative jurisdiction of Puerto Rico is under the Department of the Interior, and the Governor of Puerto Rico makes his annual report to the Secretary of the Interior.

Although Puerto Ricans, with few exceptions, pay no Federal income taxes, the Island receives Federal aid similar to the states. In addition, the Internal Revenue Taxes collected on Puerto Rican rum sold in continental United States are turned back to the Insular Treasury and are an important source of income for the Insular Government.

Puerto Rico is inside United States tariff walls which has resulted in great dependence on the United States both as a market for exports and a source of imports. It is the second largest customer of the United States in the Western Hemisphere with the exception of Canada. Puerto Rico is also subject to the coast-wise shipping laws which prohibit the Island from shipping to and from continental United States and between ports on the Island in foreign boats.

ECONOMIC SITUATION

In 1946 Puerto Rico had an estimated population of 610 persons per square mile. It is one of the most densely populated agricultural countries in the world. In addition, large areas of the island are mountainous and are useless for agricultural cultivation. This lack of balance between populations and resources has kept at least two-thirds of the population at a low level of living. Nevertheless, in 1946 Puerto Rico was relatively prosperous. The resumption of normal shipping after the war, the beginning of post-war construction, and the Soldiers' Unemployment Bonus were the principal sustaining factors.

Puerto Rico has three principal remunerative crops—sugar, tobacco, and coffee—of which sugar is by far the most important. The sugar crop in 1946 was estimated at 908,246 tons, an increase of 12,000 tons over the previous year. Tobacco, which in 1945 was overproduced, was decreased in acreage in 1946. In 1946, Puerto Rico's 23,745 tobacco growers voted to establish a quota on production. Although coffee exports have dwindled to practically nothing, the industry is still of great economic importance and ranks second to sugar cane in area of cultivation. To overcome the threat of hurricanes, which in 1928 and 1932 practically demolished the coffee plantations, the Insular Government in 1945 set up a plan of insuring both crop and plantations. In 1946, the Coffee Industry Relief Commission was created to study and put into effect a general plan for the rehabilitation of the coffee industry.

As was expected, the production of rum decreased in 1946, as stocks of other liquors increased in the United States.

The War Emergency Program, the Insular successor to the WPA which was abolished in 1943, is continuing its relief activities, but on a reduced scale. For the year 1945-1946, an average of 13,079 per month were employed on work projects. The WEP contributed $3,000,000 to the Public Welfare Fund of the Department of Health for direct relief payments and financed the operation of school lunches and children's milk stations.

HEALTH

The birth rate increased in 1945 to 42.3 live births per 1,000 population, as compared with 41 in the previous year. The death rate decreased to a record low of 14.1 deaths per 1,000 population, as compared with an average of 17.6 for the five years 1940-1944. This record low death rate was the result of a decrease in the respective rates of almost all the leading causes of death in the Island. Diarrhea and enteritis are still first, with tuberculosis second and pneumonia third. At the present rate of births and deaths, there is an estimated net increase in population of 55,000 persons each year.

The School of Tropical Medicine in San Juan is the leading American research school for tropical diseases. Work done in the School contributed materially in establishing the value of using folic acid in the treatment of sprue, a tropical disease contracted by many American soldiers in the Pacific. Bacteriological studies made during 1946 included work on typhus, leprosy, and filiariasis.

EDUCATION

There is a serious shortage of both schools and teachers in Puerto Rico, but enrollment in public schools continues to increase. Total public day school enrollment in 1945-46 was 349,915, an increase of 19,045 over the previous year. During this year, Puerto Rico had 2,799 school buildings with 7,043 classrooms and 8,851 teachers. Out of a total estimated school population of 648,230, slightly more than half are in school and of those enrolled, over 60 per cent go to school for a half day or less.

The University of Puerto Rico, located in Rio Piedras, had a total enrollment of 5,109 in 1945-46. During the year, the University was put on the accredited list of the Middle States Association of Colleges and Secondary Schools. The University has inaugurated a Veterans Service Office to offer counsel and special courses for veterans. A Social Research Center for the study of insular social problems was established and a Mobile Theatre put into operation. Funds were granted for the construction of a new science building.

LABOR

Organization of labor has progressed rapidly in recent years. There are two Island-wide labor organizations—the Free Federation of Labor, formed in 1899, affiliated with the American Federation of Labor, and the General Confederation of Workers, formed in 1940. In 1945, the Confederation split into two factions, each retaining the parent name.

Wages in Puerto Rico are higher than elsewhere in the Caribbean for both industrial and agricultural workers. Minimum wage rates are established under both Federal and Insular legislation. Although wages have risen to an all-time high, they have failed to keep up with increased living costs and are still below United States standards. Despite this, there were no serious labor disputes in Puerto Rico in 1946.

In October 1945, the Department of Labor, in cooperation with the War Emergency Program, instituted a survey of incidence and duration of unemployment and cost of disabling illnesses, this survey to be the basis for the establishment of a social security program in Puerto Rico.

INDUSTRIAL DEVELOPMENT

Realizing that increased industrial development is necessary to help solve Puerto Rico's economic problems, the Insular Government on May 11, 1942, established the Puerto Rico Industrial Development Co., to establish and operate industries on behalf of the Government and to help finance and assist private industry. In 1946, three factories were in operation under this Company's direction—glass container and cement plants, which use native sand, clay, and limestone, and a pulp and paper plant which manufactures paperboard from waste paper. Under construction were a clay products plant and shoe and leather factories, and plans were being considered for a textile mill.

The Puerto Rico Development Bank, created by the Insular Legislature in 1942, is closely associated with the industrialization program. This bank has three primary functions: (1) to carry on refinancing operations of various kinds; (2) to act as a central institution through which all financial operations of the Insular Government can be managed; and (3) to help finance the long-range industrial development of the Island, through the Development company and private business.

AGRICULTURE

Puerto Rico's only important natural resource is land. A primary objective, therefore, is to intensify and expand land uses. On April 24, 1945, the legislature created the Agricultural Development Co., with authority and funds to develop to the utmost the commercial possibilities of the Island's agriculture.

Various other Federal and Insular government agencies are at work on the problem of making the best use of the land. Three research centers—the Agricultural Experiment Station of the University of Puerto Rico, Federal Agricultural Experimental Station, and Institute of Tropical Agriculture—carry on research to develop better plant strains and improve production techniques.

Another important aspect of the Government's program is soil conservation. In March 1946, the legislature passed the Soil Conservation Districts Act, providing for the creation of soil conservation districts and authorizing such districts to adopt programs and regulations for the protection of land against soil wastage and erosion.

LAND PROGRAM

Because the land area of Puerto Rico is so limited, in relation to population, and because land ownership has been concentrated in the hands of a comparatively small group, the question of land ownership and land use is supremely important. The Insular Legislature, in the Land Act of 1941, implemented the Joint Resolution adopted by Congress in 1900, since incorporated in Puerto Rico's Organic Act, providing that no corporation or partnership engaged in agriculture on the Island may own or control more than 500 acres of land.

The Land Act established the Land Authority to purchase land, primarily, from owners of more than 500 acres and directed it to distribute that land in three ways: (1) in plots of from one-quarter cuerda to three cuerdas (one cuerda is slightly less than one acre) to landless agricultural workers (agregados); (2) in parcels of from 5 to 25 cuerdas to individual farmers as family sized farms; and (3) in large farms of from 100 to 500 acres which are leased to experienced farmers to be operated on a proportional profit basis. Laborers on these farms share in the profits, in addition to receiving regular wages for their work.

Through June 1946, the Land Authority had acquired nearly 63,000 cuerdas of land; 16,851 parcels had been distributed to agregados. Eighteen proportional profit farms were in operation and showed a net profit of $400,000 for the year. In 1946, the Land Authority acquired the Cambalache sugar mill which was operated on a proportional profit basis. The Cambalache Central profits for the year exceeded $175,000.

PUBLIC UTILITIES

Development of power resources is the function of the Water Resources Authority. All the power facilities of the Island are now operated by this Authority. To meet the immediate need for additional power, the Water Resources Authority, in March 1946, purchased from the Army a floating power plant, "The Seapower." This is a self-contained electric power generating plant of high efficiency and with a capacity of 45,000 horsepower of continuous output. It is believed that the Seapower will take care of the increasing demand for power for the next two years.

FINANCES

General fund collections for the year 1945-46 were estimated at $81,224,576.79. The largest single source of income was the U. S. Internal Revenue tax on rum shipped to the United States which is returned to the Insular Treasury. Although there has been a continuing decrease in this item since 1943, when it reached a high of $63,000,000, it still amounted to over $33,000,000 for 1945-46. There was an increase of $1,289,000 or 60 per cent in customs duties, owing to the increasing volume of trade between Puerto Rico and foreign countries. Other Insular taxes also showed increases. Income tax receipts were up 24 per cent over the previous year. The Insular public debt, already low, was cut 20 per cent to $10,532,000 on July 1, 1946.

LEGISLATION

The Sixteenth Legislature met in its second regular session from Feb. 11 to March 31, 1946. During that time 754 bills were passed, of which 514 were approved by the Governor. Some of the important pieces of legislature enacted included the creation of an Insular Soil Conservation Committee; appropriations to the Communications Authority for construction or acquisition of a telecommunication system and to set up and operate a radio broadcasting station; provisions for the incorporation, management, and control of cooperative associations; an appropriation for a hospital of industrial medicine and surgery and of physical rehabilitation for the care of workmen injured in labor accidents or suffering from occupational diseases; and various appropriations for the construction of new municipal hospitals and rural medical health centers.

DEPARTMENT OF JUSTICE

The Department of Justice was reorganized in 1945-46. A reform of the penal system, including penitentiaries, was initiated and a system of probationary sentences instituted for first offenders. A corporation was set up to provide vocational training for prisoners and an experimental camp started for agricultural training.

PLANS FOR THE FUTURE

Puerto Rico's problems are mainly economic. It has a rapidly increasing population and inadequate income production. The program of the present Administration is to intensify the use of resources and to develop new methods of increasing income as well as to improve and extend social services, which are at present far below the accepted minimum standards.

The accomplishment of this program depends upon careful budgeting of government income. Responsibility for evolving a financial program to insure the best use of Insular Government funds lies with the Puerto Rico Planning Board, which was established May 12, 1942. The Board each year submits to the Governor and the Legislature a six-year plan or financial program which serves as a guide for appropriations.

Major activities of the Board during 1946 also included adoption of zoning regulations for all urban areas and the preparation of master plans for airports and insular highways.

VIRGIN ISLANDS OF THE UNITED STATES

By Morris F. de Castro

Acting Governor of the Virgin Islands of the United States

DESCRIPTIVE

The Virgin Islands of the United States, formerly known as the Danish West Indies, were acquired by the United States by purchase from Denmark in 1917. This group comprises three islands: St. Croix, 82 square miles in area, with a population in 1940 of 12,902; St. Thomas, 32 square miles, with a population of 11,265; St. John, 19 square miles, with a population of 722; and approximately 50 smaller, uninhabited islands. St. Thomas lies 39 miles east of Puerto Rico, and 1,400 miles southeast of New York; St. Croix, 59 miles to the southeast of Puerto Rico, and 40 miles south of St. Thomas; and St. John, three miles east of St. Thomas.

The seat of government is at Charlotte Amalie, on the island of St. Thomas, whose harbor is one of the finest in the Caribbean. The Organic Act of 1936 prescribes that the Governor and the Government Secretary shall be appointed by the President, while the Administrator for St. Croix and other heads of departments are appointed by the Secretary of the Interior. The two municipalities of St. Thomas-St. John and St. Croix, corresponding to the three largest islands, each elects by universal suffrage a Municipal Council with power over municipal finances subject to review by the Governor. These councils also confirm the Governor's appointments of municipal officers. The Governor is William H. Hastie who succeeded Charles Harwood May 17, 1946.

COST OF THE ISLANDS

The Virgin Islands of the United States constitute the latest addition to its territorial possessions, acquired in 1917 from Denmark in consequence of the threat of compulsory sale to Germany, already foreshadowed by evidence of German penetration. The purchase price was $25,000,000. This sum is by far the largest ever paid by the United States for the acquisition of territory. It represents $295 per acre, as compared with $0.02 for Alaska, $0.03 for California, $0.04 for Louisiana, $0.14 for the Philippines, and $35 for the Canal Zone. Since the transfer, it is estimated that the Federal Government has spent over $15,000,000 for the benefit of the Islands, excluding military expenditures required by the Second World War. It is estimated, also, that the Virgin Islands have paid into the United States Treasury, during the past few years, approximately $40,000,000 in internal revenue taxes collected in the United States on liquors produced in the Islands and shipped to the United States.

ECONOMIC SITUATION

Major factors in the economic life of the Islands are the bunkering activities of the port of St. Thomas, the manufacture of beverage spirits in St.

Thomas and St. Croix, and the sugar industry of St. Croix. The year 1946 showed a steady improvement in shipping to St. Thomas. A total of 353 oceangoing vessels with gross tonnage of 1,493,725 visited St. Thomas, as compared with 204 vessels with gross tonnage of 264,640 in 1945. Prospects are good for continued improvement. The tourist trade, dormant during the war, is only beginning to revive.

Underlying the economic problems of the Virgin Islands is the fact that a large amount of money is sent out of the communities in payment for food, clothes, and other commodities produced abroad, while very little money comes from the outside for things that are produced in the Islands. Every successful effort to reduce the Islands' dependence upon imported goods and services, and to increase the consumption of local products at home and their marketing abroad, will help the economy of the Islands.

SUGAR

St. Croix' basic industry, sugar, showed a production increase from 4,040 tons in 1945 to 4,970 tons in 1946, through increased acreage and acre-yield, and by improved processing. The price to the cane farmer for his 1946 crop was $8.60 per ton as compared with $6.73 in 1943 and $3.02 in 1941. The day's wage for field workers rose from $1.04 in 1941 to $1.60 in 1945, and $1.84 in 1946.

RUM AND LIQUORS

St. Croix exported 137,608 proof gallons of rum and liqueurs in 1946, as compared with 129,082 proof gallons in 1945. St. Thomas exported 817,441 proof gallons in 1946, as compared with 1,340,208 in 1945. The rum and liquor industry, upon which these Islands have depended during the past few years for their major source of revenue and for private employment of wage earners, has suffered a severe curtailment of production owing to Federal conservation orders. Still the largest single industry in the islands, rum manufacturers were turning more and more, as the year closed, to the still unrestricted manufacture of whiskies, gins, and liqueurs from neutral spirits for the continental American market.

FINANCES

On June 30, 1946 the treasury of the Municipality of St. Thomas and St. John showed an unappropriated surplus of $28,295.57. However, the revenues were increased by $216,547.62, representing surplus funds of preceding fiscal years transferred to meet this year's obligations. On the other hand, the Municipality of St. Croix required a Federal deficit appropriation of $150,000.

The revenues of the Municipality of St. Thomas and St. John were $1,112,002.07, as compared with $1,257,416.53 in the preceding year, a decrease of 11.56 per cent. Income tax collections were $622,573.27 as compared with $941,090.47 in the previous fiscal year, a decrease of 33.85 per cent. The Budget for the Municipality of St. Thomas and St. John carried total appropriations of $1,083,851.50.

In the municipality of St. Croix revenues were $262,257.54 as compared with $515,383.28 a year ago, a decrease of 49.11 per cent. Congress appropriated $150,000 toward the expenses of local government in the Municipality. Income tax collections were $103,069.94, which was a decrease of 73.64 per cent from collections in 1945 of $391,075.63. The Budget for the Municipality carried total appropriations of $421,658.

Financial and economic trends do not indicate any unusual revenue increases in the coming year. Congress has provided for a study of the municipal government by three municipal experts under the supervision of the committees of appropriations of the Senate and House of Representatives, to formulate a policy as to future assistance from the Federal Government.

FEDERAL PUBLIC WORKS PROGRAM

With appropriations totaling $2,360,005, already made by Congress for the projected construction by the Federal Works Agency of public works, health and sanitation facilities authorized by Public Law 510, approved Dec. 20, 1944, no major construction project had been started by June 30, 1946. Congress specified that all but repair projects are to be constructed by contract. The first bids opened late in the year for sanitation facilities for St. Thomas were rejected because of high costs. These projects, together with the St. Croix sanitation projects, are being readvertised.

While employment in the Islands is at a minimum, and there is urgent need for modernization of antiquated sewerage facilities and the replacement of old and overcrowded schools and hospitals, prospects for the early completion of these important facilities are not bright, because of the same restrictive factors which affect construction today in the continental United States.

HEALTH

The general health of the Islands has been good. There were no epidemics despite the primitive sewage disposal methods for large parts of the communities. Federal grants in aid of public health activities, received from the U. S. Public Health Service, have provided a major resource for substantial expansion of essential health services in the fields of venereal disease control, tuberculosis control, leprosy control, and general health training. The death rate was 16.1 per thousand and the birth rate 39.9. The infant mortality rate was 109.9 as compared with 101.2 in 1944 and 83.8 in 1943.

EDUCATION

The public school program has been maintained with senior and junior high schools, elementary schools, in-service teacher training, scholarship loans, evening schools for adults, limited vocational education, and school lunch and nursery programs. In St. Thomas and St. John, the average annual expenditure for public education per child was $66.50. In St. Croix the cost was $52.40.

SHIPPING

There has been a steady increase in shipping during the year, and prospects are brighter for the coming year; 353 oceangoing vessels with gross tonnage of 1,493,725 entered the harbor of St. Thomas during the year, as compared with 204 vessels with gross tonnage of 264,640 in 1945. The pre-war peak, however, was 1941 when 1,220 vessels with gross tonnage of 3,943,124 called at St. Thomas.

WELFARE

Efforts were concentrated on the securing of improved municipal appropriations for aid to the poor and on the obtaining of Federal aid for supplementary public assistance and welfare services through the extension to the Virgin Islands of Titles I, IV, V, and X of the Social Security Act. There is no area under the flag where American citizens are in greater need of such assistance from their government.

WEST INDIAN CONFERENCE

The Second West Indian Conference, under the auspices of the Caribbean Commission, was held in St. Thomas from Feb. 21 to March 13, 1946. For the first time, delegates included representatives of four metropolitan governments, *i.e.*, Great Britain, France, The Netherlands, and the United States. Approximately 200 persons were accommodated in St. Thomas during the 3-week sessions of the Conference. They included delegates, advisers, and facilitating personnel.

LEGISLATION

During the year, the Executive approved a total of 137 bills passed by the Municipal Council of St. Thomas and St. John, 42 bills passed by the Municipal Council of St. Croix, and 11 bills passed by the Legislative Assembly. A total of 11 bills were vetoed. Two bills were re-passed by the Municipal Council of St. Thomas and St. John over the Executive veto; one of which, an increase in wages and decrease in working hours, was sent to the President for his decision.

THE VIRGIN ISLANDS COMPANY

This is a government corporation incorporated by an ordinance enacted by the Municipal Council for the Municipality of St. Thomas and St. John in April, 1934; it is designed to manage and operate certain lands, buildings, and factories, owned by the United States, under an operating agreement between the United States and the Company. The purpose of the Company is to effect economic rehabilitation for the people of the Virgin Islands by revitalizing agriculture and industry, both of which had reached stagnation levels by 1934. No functions of other agencies were taken over or supplemented by the Company at the time of its creation. The agreement has been amended to include an abattoir, completed in 1941 as Federal Project No. 17 and currently operated by the St. Croix Livestock Association; and a market and cold storage plant in St. Thomas, completed in 1942 as Federal Project No. 18, and now operated by the Municipality of St. Thomas and St. John. Since 1941, the Company has also conducted a rural electrification project which provides alternating currrent to the country areas of the island between the towns of Christiansted and Frederiksted.

During the fiscal year ended June 30, 1946, the Company cultivated approximately 2,900 acres of administration sugar cane. Because of severe drought conditions, the last privately owned sugar factory closed in 1940, leaving The Virgin Islands Company to grind the entire crop produced on the Island of St. Croix, and consequently provide the only market for approximately 550 small growers of cane. During the 1946 fiscal year, the Company ground 47,158 tons of sugar cane (of which 14,753 tons were purchased from Federal homesteaders and small growers) producing 4,970 tons of raw sugar, sold to the Commodity Credit Corporation at $3.845 per hundredweight, free on board St. Croix, plus a support payment of $2.10 per ton of sugar cane, a great portion of which will be redistributed by the Company to labor and the small grower as their share.

AGRICULTURAL DEVELOPMENT

Numerous experiments in attempting to develop other types of agricultural pursuits in lieu of sugar cane have failed to prove that results obtained would be better than those from the island's uncertain and erratic sugar industry.

To offset sugar losses, the Company has necessarily developed the island's pre-Prohibition rum industry, more profitable than sugar, but employs comparatively few workers. The Company, through its distributor, Munson G. Shaw Co., of New York, places its rum on the continental market under the name "Government House Rum."

During the fiscal year ended June 30, 1946, the Company manufactured 71,341 proof gallons of rum, with an excess of 453,463 proof gallons of rum aging in the Company's warehouses.

SOCIAL DEVELOPMENT

Subsistence levels have been raised, decent housing and subsistence plots furnished, and sanitary systems introduced. Any governmental agency, private concern, or individual may purchase the products of the Company, rent its equipment, or otherwise have access to the services of the Company upon approval of its duly authorized officers. The Company has followed a policy of assisting hundreds of small growers and homesteaders to help themselves by renting them tractors and farm equipment, furnishing improved varieties of cane seed for planting, and grinding facilities for the sugar cane they produce. It contributes direct income to the community by making payments to the Municipality in lieu of taxes, thereby reducing the amount which the Congress would have to appropriate; moreover, through the sale of the Company's "Government House" Rum, substantial revenue taxes have been paid into the United States Treasury. However, the most satisfying point of the Federal program is the fact that an opportunity has been provided for the ultimate development of a self-sustaining economy for the Virgin Islands.

GUAM AND AMERICAN SAMOA

By William E. Neely
Lieutenant USNR; Office of Information, Navy Department

GUAM—THE ISLAND

Guam, the largest island in the Marianas group, is situated in mid-Pacific 1,500 miles east of Manila, 1,300 miles south of Japan, 3,337 miles from Honolulu, and 5,053 miles from San Francisco. It is volcanic in origin and has an area of 225 square miles. The southern part of the island is high and mountainous with a range of hills along the west coast from 700 to 1,300 feet high. The northern part is a plateau, ranging from 200 to 600 feet in elevation, and the soil, though fertile, is very shallow.

Generally, the climate of Guam is pleasant. The average yearly rainfall is 69.13 inches, 65 per cent of which falls in July and September. The minimum temperature is about 70 degrees and the maximum about 90 degrees. The island is in the typhoon belt of the western Pacific and occasionally is visited by severe storms.

Guam was discovered by Magellan in 1521 and for many years thereafter was an important stopping point for Spanish ships plying between Mexico and the Philippines. In 1898, at the close of the Spanish-American War, it was ceded to the United States and placed under the control of the Navy Department by Executive Order. It was invaded by the armed forces of Japan Dec. 10, 1941 and was occupied by the Japanese until the re-entry of United States forces in July, 1944. After the island was declared secured on Aug. 10, 1944, at the cost of 1,353 marines killed and many thousands wounded, thousands of United States military personnel and native Guamanians began the colossal task of transforming Guam into a fortress and staging area for the final assault against Japan. Within one year Guam became one of the most powerful of American advanced bases in the Pacific.

Guam now is in the process of being rebuilt and remodeled. The magnitude of the task can best be appreciated by taking into account that all the 1,750 homes in the capital city of Agana were destroyed, and the towns of Sumay, Agat, Piti, and Asan were almost completely demolished by combat operations during the war.

GUAM—THE PEOPLE

The natives of Guam are called Chamorros. The origin of the ancient Charmorros is obscure, but it is probable that they are a group that became detached and isolated in the Marianas Islands from the Prot-Malays in their migration eastward from the mainland of Asia. By reason of wars, storms, and pestilence the estimated population of 50,000 in the early days of Spanish rule had decreased to 9,630 in 1901, according to a census taken at that time by the Naval administration. A vigorous campaign in the field of public health and sanitation was instituted by the Naval government with the result that the population had increased to 23,486, as of Aug. 1, 1946. While English is the official language of the government and of the schools, the native Chamorro language is widely spoken in the daily life of the people. The predominant religion is Roman Catholicism. Throughout the Japanese occupation the people remained completely loyal to the United States and cooperated with U. S. military personnel in harassing the Japanese.

GOVERNMENT

Guam is a possession of the United States. The inhabitants are not United States citizens but are citizens of Guam and nationals of the United States. While the U. S. Constitution does not extend to Guam, most of the guarantees of the Bill of Rights have been secured to the Guamanians.

A senior naval officer is commissioned by the President as Governor of Guam and the same officer is designated by the Secretary of the Navy as Commander, Marianas Area, and Island Commander, Guam. The government is administered by departments, at the head of each of which is a naval officer responsible to the Governor and assisted by Guamanian civilians. The Guam Congress, composed of a House of Council and a House of Assembly, both elected by popular vote, sits in an advisory capacity to the Governor on matters relating to the welfare and development of Guam. On May 1, 1946 the Congress, constituted by members holding office before the war, met for the first time since the Japanese invasion. In response to popular demand a new Congress was elected July 13, 1946, with a membership reapportioned according to present population distribution.

The judiciary consists of the Court of Appeals, comprised of a Presiding Justice and four Associate Justices, two of the latter being military officers with legal training and background, and two Guamanian citizens; and of the Justice and Police Courts, both of which are presided over by the same judge, a Guamanian citizen.

On May 30, 1946 the war-born military government came to an end on Guam, and naval civil government was reestablished. On that date Rear Admiral Charles A. Pownall, USN, was inaugurated Governor.

ECONOMICS SITUATION

Guam has never been a very productive island. The natural resources are of no commercial significance. All forms of business and agriculture were disrupted by the war. The gathering of copra (dried coconut meat), formerly the chief industry on Guam, has almost ceased. A few small enterprises, such as the manufacture of soap and the making of handiwork, have provided sources of income for the island. For the most part, however, the civilian population is earning its livelihood from employment by the U. S. Navy. The Bank of Guam has reopened with resources of more than $5,000,000.

EDUCATION

During the 1945-46 school year 21 schools were rebuilt and 165 Guamanian teachers employed. Education is offered in the elementary and high school levels. The enrollment for the school year ended April 1, 1946 was 7,150. Although no training on college level is offered in Guam, plans are now being formulated for sending selected students to Hawaii and the Mainland for higher education. An Adult and Vocational Training program has been instituted for the development of skilled and semi-skilled Guamanian workers. As of April 1, 1946, 280 were receiving vocational training.

MEDICAL AND HEALTH

Upon the return of United States forces to Guam in 1944 vigorous action was taken to provide greatly needed medical care for Guamanians and to reinstitute a program of public health and sanitation. A new hospital, designated the Guam Memorial Hospital in honor of Guamanian loyalty and fervor in support of the Allied cause, has been constructed. It has a capacity of 300 beds. Other medical facilities provided include a school for native medical practitioners, a school for native nurses, and a school for native dental practitioners. A comprehensive public health program now is functioning smoothly. The steady increase of native population of Guam from 9,630 in 1901 to 23,486 in 1946 attests the general high standards of sanitation and medical care maintained on the island.

AMERICAN SAMOA

American Samoa, situated in the mid-Pacific just below the equator and 4,150 miles southwest of San Francisco, includes the island of Tutuila on which the U. S. Naval Station is located; the Manua group consisting of the islands of Tau, Olosega, Annuu, and Ofu; Rose Island; and Swains Island. These islands, with the exception of Swains, were acquired by the United States on Dec. 2, 1899 by treaty with Great Britain and Germany. Swains Island was annexed to American Samoa by joint resolution of Congress, approved March 4, 1925.

The islands of American Samoa, with the exception of Rose Island which is an uninhabited coral atoll, are of volcanic formation and mountainous, rising in places abruptly from the sea. The total area of the group is 76 square miles. Pago Pago Bay, one of the safest and best harbors of the South Seas, nearly cuts the island of Tutuila in half.

The climate of the islands is tropical but equable. From May to November strong southeast winds are experienced, and during the other months the winds are variable. Moderate gales and occasional hurricanes have been recorded. The average yearly rainfall for 41 years has been 193.5 inches. The yearly temperature ranges from 70° to 90° Fahrenheit.

The soil of the islands is of two kinds, clay and sand. In the valleys it is alluvial and quite fertile for growing tropical fruits and taro. Owing to heavy rainfall the soil on hillsides is thin and there is no subsoil.

THE SAMOAN PEOPLE

The native people of American Samoa are Polynesian and closely akin to the natives of Hawaii and the Maoris of New Zealand. The Samoan language is probably the oldest form of Polynesian speech extant. The population of American Samoa, as of June 30, 1946, was 17,077, mainly Polynesian, an increase of more than 25 per cent over the last pre-war population figure reported.

GOVERNMENT

American Samoa, classified as a possession of the United States, is under the control of the Navy Department and is administered by a Naval Governor. The inhabitants, citizens of American Samoa, are nationals but not citizens of the United States. While the Constitution of the United States does not extend to American Samoa, the Codification of the Regulations and Orders for the Government of American Samoa, printed in both English and Samoan languages, contains most of the guarantees of the Bill of Rights. For purposes of local administration, American Samoa is divided into three districts each having a Samoan governor and maintaining village, county, and district councils composed of hereditary chiefs and their advisors. The chief Samoan council, or Fono, meets annually and serves in an advisory capacity to the Governor in matters relating to the welfare of American Samoa. The judicial power is vested in Village Courts each presided over by a village magistrate; six District Courts each presided over by a Samoan District Judge and a U. S. District Judge; and a High Court presided over by a U. S. civilian Chief Justice and two Samoan Associate Justices selected from the District Judges. Capt. H. A. Houser, USN, the present Governor of Samoa and Commandant of the Naval Station, Tutuila, assumed office Sept. 10, 1945.

EDUCATION

For the year ended June 30, 1946 instruction was offered in 44 public and six private schools having a total enrollment of 3,903 and employing 95 Samoan teachers and two Samoan principals. The curriculum of the public schools is based on studies and recommendations made by members of the faculty of the University of Hawaii and by other educators experienced in the problems of Polynesian education. Attendance is compulsory for children between the ages of 7 and 15. Illiteracy in 1930 was lower than in any other United States possession—6.3 per cent. The Government Experimental Farm is the most important phase of adult education.

ECONOMY

The natural resources of American Samoa are of no economic importance. There are no minerals, timber, or fish of sufficient quantity to justify industrial development for export. Copra (dried coconut meat), the most important crop for commercial sale, produced a gross income of $27,394.21 for the period between Jan. 1, 1945 and June 30, 1946. A flourishing business in Samoan handicraft, which sprang up during the war years, has been continued in the post-war period. For the year ended June 30, 1946 the Bank of Samoa reported resources of $1,607,672.53.

MEDICAL AND HEALTH

The new Samoan Hospital established in 1946 has a capacity of 200 beds and a staff of 20 Naval Medical officers, 10 Naval nurses, and 136 Naval corpsmen. Included in the facilities of the new hospital are an insane asylum and a leprosarium. The hospital consists of eight modern well lighted and well ventilated wards, modern operating rooms, laboratory treatment room and dental clinic. A motorized Child Health Clinic, recently established, visits villages distant from the hospital.

THE DISTRICT OF COLUMBIA

By W. Reed West

Professor, The George Washington University

THE FEDERAL CONTRIBUTION

The District Government is not able to tax Federal properties that lie within its territorial limits. On the other hand, various departments of the District Government furnish services of value to the Federal establishments. It has, therefore, been the practice of the Federal Government to make a contribution to District finances applicable to each fiscal year. The amount appropriated for the fiscal year ending June 30, 1947, is $8,000,000, an increase of $2,000,000 over the amount appropriated in recent years.

THE PLEBISCITE

November 5, 1946 election day, was chosen as voting day in an unofficial plebiscite in the District to express an opinion on two questions: first, whether the voter wanted the right to vote for officials of the city government, and second, whether he wanted to vote for President of the United States and for members of Congress from the District. A total vote of 169,654 was reported in the *Washington Star* as an increase of 75 per cent over the vote in a similar plebiscite held in 1938, while the population had increased only about 50 per cent since that year. On the question of local suffrage about 70 per cent voted in the affirmative and 30 per cent in the negative; on national suffrage about 84 per cent voted affirmative and 16 negative. If the vote had not been unofficial with no assurance that it would lead to any action it is likely that a heavier vote would have been cast, but, on the other hand, a heavier vote might have brought out a higher proportion of negative votes among the less enthusiastic citizens who did not turn out at the polls this time. Militating against the movement for local suffrage is the fact that many government employees maintain voting residences elsewhere. The fact that a considerable proportion of the population of the District is Negro, probably has been a deterrent to the suffrage movement among a portion of the whites, especially in respect to the local government aspect. The argument is advanced that, in comparison with other large cities, Washington has been well governed and free from scandals. However, belief in the excellence of the local government was shaken during 1946 by revelations of inefficient management in the District jail that were traceable to weaknesses in the governmental structure of the District.

NEW DEPARTMENT OF CORRECTIONS

Some spectacular escapes from the District jail and suggestions of incompetent management led to the appointment of a special subcommittee of the House Committee on the District of Columbia under the chairmanship of F. E. Hébert of Louisiana, to report upon the penal institutions of the District. The Board of Public Welfare, consisting of persons serving without pay and acting through a Director of Public Welfare has been the local authority in charge of jails, although the Board of Commissioners is the chief administrative authority for the District. The committee found the basic difficulty in connection with the District penal institutions to be the lack of a clear responsibility in administration, although poor pay and poor training of the jail personnel, weaknesses in the plant, lack of definite policies and confusion in the basic laws have contributed to the problem. The laws in respect to the jail had been enacted while the jail had been passed in succession through the hands of the United States marshal, the President, the Interior Department, the Attorney General, the District Supreme Court, and the Board of Public Welfare.

It was recommended that a Department of Corrections be established to administer the penal institutions of the District, that the physical plant be improved, that the number of personnel be increased and reclassified, that the rules and regulations be revised, that procedures for handling escapes and emergencies be established, and that the personnel be given systematic training. As a long-range reform it was recommended that a study of the penal institutions be made with a view to revision of the basic laws. The problem in the District is complicated by the fact that its penal institutions handle petty offenders who ordinarily are cared for in local jails, serious offenders who normally are cared for in state institutions, and in addition prisoners who have violated Federal laws not exclusively applicable to the District. Immediate legislation growing out of this report was Public Law 460, creating a Department of Corrections under a Director appointed by the Commissioners, with power to promulgate, with approval of the Commissioners, rules and regulations and administer the District penal institutions. The powers of the Board of Public Welfare in respect to penal institutions were transferred to the Commissioners and the powers of the Director of Public Welfare in respect to penal institutions were transferred to the Director of the Department of Corrections.

SLUM AREAS

Another problem of public welfare has been the elimination of slum areas. The Alley Dwelling Act of 1934 had fixed a time beyond which buildings in alleys could not be used as dwellings, but it had not been found feasible under conditions arising since that time to carry out this drastic provision, and the deadline had been twice advanced. Public Law 457 extended the date again, this time to July 1, 1947. Meantime, for more than two years new legislation had been under consideration. There had been conflict between those who favored public low-rent housing and those who believed that private agencies should be relied upon.

The new legislation was based on the theory that only a public agency could plan and see to the execution of large low-rent housing projects, but that private agencies should be given an opportunity to carry out the plans. Recognizing the fact that private funds might not be forthcoming, the act makes provision for action through a public housing agency in the event that it becomes necessary. An existing agency, the National Capital Park and Planning Commission, is directed to work out, subject to approval by the Commissioners, a general plan of the areas to be developed, designating the uses to which various parts of these areas are to be devoted. To carry out the plan, the District of Columbia Redevelopment Land Agency, composed of five persons, is created, two of the members to be appointed by the President and three by the Commissioners. The sum of $20,000,000 is authorized to be placed in a trust fund for the use of the Agency in its work, primarily in the purchase of the land in areas designated by the Planning Commission. Proceeds from sales and other income will be placed in the fund, which after ten years is to be turned over to the Treasury.

The Agency is required to give a preference to private enterprise in the lease or sale of any land. However, if private enterprise is not reasonably available public redevelopment companies may be used. Effective at the termination of a year the powers granted under the Alley Dwelling Act of 1934 in the acquisition of real property are transferred to the Agency. The National Capital Housing Authority (formerly known as the Alley Dwelling Authority) is declared by the act to be a redevelopment company so that it may undertake developments under the act in the event of the failure of private enterprise to come forward. Thus the law is designed with the intent of clearing out the substandard areas of the District and providing adequate low-cost housing, permitting private enterprise an opportunity to meet the need but providing for public projects in the event that private enterprise fails.

HOSPITAL CENTER

Another project for governmental aid is the projected hospital center. The need for increased and improved hospital facilities in Washington has been serious. Recently under the Lanham Act, the George Washington University Hospital and the Georgetown University Hospital were aided in providing new hospitals, but Congress recognized a need for further increased facilities. Accordingly Public Law 648 authorized the appropriation of $35,000,000 for the purchase of a site and the construction of a hospital center by the Federal Works Administrator, of which amount the District is to provide 30 per cent. The Administrator is authorized to lease or sell the hospital facilities so provided, and of the funds so obtained 30 per cent is to go to the District. In this way, governmental aid is extended to such hospitals as may desire to participate.

COMMUNICABLE DISEASES

The District authorities have been somewhat hampered in the control of persons afflicted with communicable diseases. Anyone afflicted with a disease subject to quarantine and who by carelessness endangered the public health was subject to a fine of not more than $100 or imprisonment of not more than 30 days or both. Penalties, however, would not correct the effect on others of the carelessness of the diseased person. Under Public 664 the health officer may, on probable cause in cases of persons afflicted with communicable disease or who are carriers of such disease, order the detention of such person in a place designated by the health officer. This order is effective for only 48 hours but may be continued by a judge of the Municipal Court, with a hearing to be held within ten days, with the person present or absent in the discretion of the court. Maximum penalties for violations are raised to $300 or imprisonment for 90 days or both.

APPRENTICESHIP

In an effort to regularize the conditions of apprenticeship, to protect the interests of apprentices and to maintain a balance between the needs of the trades and the number of skilled workmen, Public Law 387 sets up an apprenticeship council consisting of three representatives from employer organizations and three from employee organizations together with one designated by the Superintendent of Schools without vote, and *ex officio* the Director of the District of Columbia Employment Center without vote. In addition, the Secretary of Labor is to name a Director of Apprenticeship from the employees of the Apprentice-Training Service set up under Public Law 308, which service is also to provide a staff for the Director. The various trades are authorized to set up joint committees which will propose training standards to be reviewed by the Council. Violations of apprenticeship agreements are to be considered after hearings by the Director under rules set up by the Council, with appeal to the Council and from it appeal to the District Court of the United States for the District of Columbia.

SERVICEMEN

A number of acts relating to servicemen were signed by the President. Public Law 372 removed in respect to loans under the Servicemen's Readjustment Act of 1944 the disability of minority of the serviceman or of a minor spouse acting jointly with him, and removed certain limitations on building and loan associations in the making of loans. Public Law 376 amended the black-out law of Dec. 26, 1941, so as to permit the Commissioners to provide services to veterans and war workers to the end of 1947. Public Law 385 authorized the construction of sewers and other services in the District and neighboring counties in Maryland and Virginia in connection with temporary veterans housing. Public Law 380 exempted a building owned by the disabled American veterans from taxation.

SCHOOLS

Public Law 624 liberalized the provisions of the retirement plan for public-school teachers. In framing the bill the House District Committee had in mind the thought of bringing the teachers' retirement law into line with the retirement plan in force for the classified Federal and District employees, except that in making computations those in the lower salary brackets were to be given an advantage over those in the higher brackets. Public Law 568 increased the salary of teachers by the flat amount of $450. Public Law 561 established two heads of departments of military science and tactics, one of whom was for the white schools and one for the colored schools. Those department heads were to take over the work formerly done by two senior high school teachers. Public Laws 514 and 644 authorized the Board of Public Welfare to operate a system of nurseries and nursery schools in the public schools and elsewhere. During the war, child day-care centers were maintained under a Federal appropriation as a means of encouraging mothers to accept employment. On the expiration of this appropriation on Feb. 28, 1946, the centers had been maintained largely through aid from the Community War Fund.

MINOR LEGISLATION

Other legislation provided that extra compensation to certain elements of the police force granted in an act of 1924 was to be treated as basic pay, in order to overcome a decision of the Comptroller General that such increases were not to be computed as basic pay for purposes of retirement (Public 417); increased the pay of members of the police and fire departments by 14 per cent, in line with the act increasing the pay of Federal employees (Public 491); amended the Unemployment Compensation Act so as to permit the purchaser of an established business to receive the benefits of the former owner's experience, in the computation of the tax rate (Public 501); enabled the Washington Railway and Electric Co. to comply with an order of the Securities and Exchange Commission under the Public Utility Holding Act of 1935, to sever relationship with certain of its subsidiaries, and removed certain legal impediments on the acquisition of stock in the Braddock Light and Power Co. by the Potomac Electric Power Co. (Public 416); permitted charitable, educational and religious associations incorporated in the District to provide for voting by mail or proxy (Public 626); provided a filing procedure in cases of adoption outside the District (Public 453); made some changes in the law in regard to the registration of nurses (Public 678); removed the prohibition in the act of 1901 against the reappointment of jury commissioners within three years of the expiration of a term (Public 674); permitted the use of decimal gradations on gasolene pumps (Public 340); authorized three additional deputies for the Register of Wills (Public 637); extended the Emergency Rent Act through 1947 (Public 472); exempted from the District inheritance tax property transfers to the Red Cross (Public 430); named a bridge on New Hampshire Avenue "The Charles A. Langley Bridge" (Public 625); and directed the office of the Recorder of Deeds to close on Saturdays (Public 606). Some of this legislation is noteworthy principally as indicating the ridiculous details with which Congress is burdened in the present system of governing the District.

PART THREE
GOVERNMENTAL FUNCTIONS

DIVISION VII

PUBLIC FINANCE AND TAXATION

NATIONAL FINANCE AND THE PUBLIC DEBT

By William J. Carson
Associate Professor, University of Pennsylvania

GENERAL

National finance in fiscal and calendar 1946 reflected the adjustments incident to war demobilization, reduction in war expenditures, resumption of peacetime services of government, reconversion of the national economy from production for war to production for peace, and requirements of the United States incident to the position in international affairs in which it found itself as a result of the war. The outlines of the nature and composition of the Federal budget in the post-war years became clearer accordingly.

From the peak of $100,400,000,000 in fiscal 1945, expenditures declined to $63,714,000,000 in 1946. In fiscal 1947 (July 1, 1946-June 30, 1947) they are estimated to decline still further to $42,873,000,000. Net receipts from taxation in fiscal 1947 are estimated to be $40,230,000,000 as compared with $43,038,000,000 in fiscal 1946 and $46,457,000,000 in fiscal 1945 when the peak was reached. The rapid reduction in expenditures in fiscal 1946 and 1947 and the continuation of receipts from taxation at wartime levels were accompanied by a reduction in the Federal deficit for fiscal 1947 to the smallest figure since before the war. In his budget message to Congress in January 1947, President Truman estimated tax receipts in fiscal 1948 slightly in excess of expenditures, thus indicating a balanced Federal budget for the first time since 1930.

In February 1946, the Federal debt reached a peak of $279,214,000,000. By the end of November 1946 it was reduced to $262,280,000,000, a reduction of $17,000,000,000 from the wartime peak. Reduction in the debt was made possible mainly by a reduction in the balances in the general fund of the Treasury from $26,000,000,000 in February 1946 to $6,665,000,000 in November.

RECEIPTS AND EXPENDITURES

During the nine years, fiscal 1939-1947, total Federal expenditures were approximately $448,640,000,000. Receipts were $227,114,000,000, leaving a deficit during the war years of $221,500,000,000. Expenditures increased from a total of $9,027,000,000 in 1939 to a peak of $100,400,000,000 in 1945 when the war effort was at its maximum. Net receipts from taxation increased from $5,165,000,000 in 1939 to a minimum of $46,457,000,000 in 1945. For the entire war period receipts from taxation were 50.6 per cent of expenditures, leaving a total of 49.4 per cent to be raised by borrowing.

VII. PUBLIC FINANCE AND TAXATION

Table I shows the receipts, expenditures, and the deficit by years for the nine-year period.

TABLE I

FEDERAL BUDGET RECEIPTS AND EXPENDITURES, FISCAL YEARS, 1939-1947

(In millions of dollars)

Fiscal Year	Net Receipts	Expenditures	Excess of Expenditures
1938-39	5,165	9,027	3,862
1939-40	5,387	9,297	3,910
1940-41	7,607	13,765	6,158
1941-42	12,799	34,290	21,491
1942-43	22,282	79,702	57,420
1943-44	44,149	95,573	51,424
1944-45	46,457	100,398	53,941
1945-46	43,038	63,714	20,676
1946-47 Estimate	40,230	42,873	2,643
Total	227,114	448,639	221,525

FEDERAL EXPENDITURES

Total expenditures for fiscal 1947 of $42,873,000,000 are approximately $21,000,000,000 smaller than expenditures in fiscal 1946. The principal purposes for which the expenditures of $42,873,000,000 in fiscal 1947 will be required and the amounts for the corresponding purposes in fiscal 1946 were reported by President Truman in his budget message and are given in Table II.

MAJOR ITEMS OF EXPENDITURES

(In millions of dollars)

	Fiscal 1947
National defense	15,150
Veterans' services and benefits	7,601
International affairs and finance	5,638
Interest on public debt	4,950
Refund of receipts	2,155
Other activities	7,397
Total	42,873

The item of $15,150,000,000 for national defense includes the outlays for the Army, Navy, and supporting defenses. The figure is approximately $30,000,000,000 smaller than in fiscal 1946. In his budget message, President Truman noted that, though the United Nations is expected to move

TABLE II

FEDERAL EXPENDITURES

(In millions of dollars)

Description	Estimated Fiscal 1947	Actual Fiscal 1946
General and Special Accounts		
National defense	15,150	45,066
Veterans' services and benefits	7,601	4,414
International affairs and finance	5,638	1,831
Social welfare, health and security	1,570	1,113
Housing and community facilities	525	158
Education and general research	71	88
Agriculture and agricultural resources	1,582	1,035
Natural resources not primarily agricultural	727	275
Transportation and communication	936	866
Finance, commerce and industry	176	216
Labor	124	104
General government	1,483	989
Interest on the public debt	4,950	4,748
Refund of receipts	2,155	3,119
Reserve for contingencies	10	—
Adjustment to daily Treasury statement basis	—	997
Total, general and special accounts	42,698	65,019
Total checking accounts of wholly owned Government corporations and credit agencies with U. S. Treasurer (net)	175	1,305[1]
Total budget expenditures	42,873	63,714

---

[1] Excess of credits, deduct.

successfully toward world security, the United States must continue to make large expenditures for national defense in order not to weaken its international position. The items for fiscal 1947 and 1948, he said, represent a proper balance between security and economy.

The figure of $7,601,000,000 for veterans' services and benefits is to provide education, rehabilitation (including pensions), insurance, readjustment benefits, hospitals, and other services. This item is an increase of $3,187,000,000 over the amount required in fiscal 1946. Expenditures of $5,638,000,000 on international affairs and finance are to cover outlays for foreign relief, contractual commitments in connection with the loan agreement with the United Kingdom and under the reconstruction lending program of the Export-Import Bank, and for support of the growing load of work in the field of foreign relations.

Interest on the public debt is approximately $5,000,000,000. The item refund of receipts is to cover refunds that are fixed obligations due under present tax laws.

The remaining figure of $7,400,000,000 is to cover the outlays for social welfare, health and security, housing and housing facilities, agriculture and agricultural resources, transportation and communication, services to business and labor, general government functions and operations, and others.

REVENUE AND TAXATION

Net receipts during fiscal 1946 totaled $43,038,000,000. In fiscal 1947 receipts are estimated to decline to $40,230,000,000. Direct taxes on individuals are estimated at $18,637,000,000 in fiscal 1947, direct taxes on corporations at $9,227,000,000, and excise taxes at $7,283,000,000. In the budget message, the President pointed out that receipts from direct taxes on individuals will decrease from the fiscal year 1946 to 1947 because of the lower effective income tax rates in the Revenue Act of 1945. Direct taxes on corporations will decline in fiscal 1947 largely because of the repeal of the excess profits tax. The returns from excise taxes are expected to increase in 1947 because of increased consumer demand and increased production. The details of receipts and revenues are given in Table III.

SIZE AND DISTRIBUTION OF THE PUBLIC DEBT

At the close of the fiscal year ended June 30, 1945, the Federal public debt was $258,682,000,000. By February 1946, the total had reached $279,214,000,000, the peak for the war period. By June 30, 1946, the total had declined to $269,422,000,000, and by November 1946, it had declined still further to $262,277,000,000, approximately $17,000,000,000 below the peak of February 1946.

The reductions were due mainly to

TABLE III

FEDERAL RECEIPTS

(in millions of dollars)

Description	Estimated Fiscal 1947	Actual Fiscal 1946
Direct taxes on individuals	18,637	19,008
Direct taxes on corporations	9,227	12,906
Excise taxes	7,283	6,696
Employment taxes	1,955	1,714
Customs	496	435
Miscellaneous receipts	3,987	3,480
Total receipts	41,585	44,239
Deduct: Net appropriation to Federal old-age and survivors income trust fund	1,355	1,201
Net receipts	40,230	43,038

TABLE IV

UNITED STATES GOVERNMENT DEBT, VOLUME AND KIND OF SECURITIES [1]

(in millions of dollars)

	June 30, 1946	February 28, 1946	June 30, 1945
Marketable public issues			
Treasury bills	17,039	17,032	17,041
Certificates of indebtedness	34,804	41,413	34,136
Treasury notes	18,261	19,551	23,497
Treasury bonds	119,323	121,635	106,448
Total	189,606	199,810	181,319
Non-marketable public issues			
U. S. Savings Bonds	49,035	48,692	45,586
Treasury tax and savings notes	6,711	8,043	10,136
Total	56,173	57,206	56,226
Special issues	22,332	20,897	18,812
Non-interest bearing debt	1,311	1,301	2,326
Fully guaranteed interest bearing securities	467	539	409
Total interest-bearing debt	268,111	277,912	256,357
Total gross direct debt	269,422	279,214	258,682

[1] Source: *Federal Reserve Bulletin*, December 1946, p. 1387.

the policy of the Treasury to use its cash balance to retire securities rather than to replace maturing obligations with new issues. This policy is revealed in the decline in the cash balance of the general fund of the Treasury from $25,961,000,000 in February 1946 to $6,665,000,000 in November.

Table IV shows in detail the volume of the Federal debt on June 30, 1945 and Feb. 28 and June 30, 1946, and the composition of the debt by type of security.

The debt retirement program, that began early in 1946, was a major factor of change in the ownership of marketable government securities. Table V which shows in detail the changes between Feb. 28 and Sept. 30, 1946, indicates the shifts that took place during the first seven months period of debt reduction.

In the "Review of the Month" in the *Federal Reserve Bulletin,* October 1946, the Board of Governors of the Federal Reserve System summarizes the changes as follows:

"The bulk of securities redeemed for cash was held by the banking system and largely by commercial banks. It appears that, of $15,500,000,000 of securities redeemed in cash from March 1 to Sept. 30, approximately $3,200,000,000 were held by Federal Reserve Banks, $8,000,000,000 by commercial banks, and $4,300,000,000 by non-bank investors. Total holdings of marketable government securities by commercial banks are estimated to have declined by $13,000,000,000 during the period, indicating sales of about $5,000,000,000 in addition to cash redemptions of securities held by them. The additional securities sold were absorbed largely by the Federal Reserve Banks, which made purchases on the market in order to offset the loss of reserve funds resulting from the retirement of Federal Reserve security holdings. Market purchases by Reserve Banks amounted to $4,300,000,000 and on balance their holdings of Government securities showed an increase of $1,100,000,000.

"Non-bank investors showed a net decrease in holdings of marketable securities of $3,400,000,000. Of this amount, it is estimated that corporations reduced their holdings by approximately $2,700,000,000 and individual investors by $1,000,000,000. The decline in holdings of marketable

TABLE V

OWNERSHIP OF UNITED STATES GOVERNMENT SECURITIES[1]

(in billions of dollars)

Holders of Securities	Amount Outstanding		Change Feb. 28 to Sept. 30
	Sept. 30, 1946	Feb. 28, 1946	
Marketable public issues:			
Federal Reserve Banks	24.0	22.9	+ 1.1
Commercial banks	77.0	90.2	−13.2
U. S. Government agencies and trust funds	6.5	7.0	− .5
Individuals	15.4	16.5	− 1.0
Corporations and other associations	18.8	21.5	− 2.7
Other	42.6	41.7	+ .9
Total	184.3	199.8	−15.5
Nonmarketable public issues:			
Savings bonds	49.5	48.7	+ .9
Savings notes	6.1	8.0	− 1.9
Depository bonds	.4	.5	− .1
Special issues	23.9	20.9	+ 3.0
Total interest-bearing securities[2]	264.6	278.5	−13.8

[1] *Federal Reserve Bulletin*, October 1946, p. 1099.

[2] Total includes guaranteed securities not included in classification of marketable issues by owners.

issues by non-bank investors as a group fell short of the amount of their cash redemptions by about $1,000,000,000, indicating that on balance they had absorbed a like amount of securities sold by commercial banks.

"Outside the banking system this picture is somewhat modified if changes in the holdings of non-marketable public and special issues are included. Non-marketable public issues outstanding declined by $1,200,000,000, reflecting a sharp decline in savings notes, which are mostly held by corporations, and some increase in savings bonds, which are largely held by individuals. Holdings of special issues by Federal agencies continued to increase. Increased holdings of government securities by insurance com-

TABLE VI

DISTRIBUTION OF UNITED STATES GOVERNMENT SECURITIES DIRECT AND FULLY GUARANTEED

(in millions of dollars)

	June 30, 1945	June 30, 1946
Total interest bearing securities	256,766	268,578
Held by banks		
Commercial banks	84,100	83,300
Federal Reserve Banks	21,792	23,783
Total	105,892	107,083
Held by non-bank investors		
Individuals	58,500	63,000
Insurance companies	22,700	25,300
Mutual savings banks	9,600	11,500
Other corporations and associations	29,900	26,500
State and local governments	5,300	6,200
U. S. Government agencies and trust funds		
Special issues	18,812	22,332
Public issues	6,128	6,798
Total	150,874	161,495

panies, mutual savings banks, and Federal agencies offset a part of the decline in holdings of corporations and individuals."

Examination of the figures in Table VI shows that almost all of the increase in the public debt between June 30, 1945 and June 30, 1946 was taken by non-bank investors. Increased holdings were reported by all types of non-bank investors except "other" corporations and associations. Holdings by commercial banks were smaller than the year before, while those of Federal Reserve Banks were slightly larger.

Reductions in debt holdings by the commercial banks and increases in the holdings by non-bank investors have long been advocated as developments to lessen the dangers of inflation resulting from war financing. Continuation in the latter half of calendar 1946 of the program of debt retirement as shown in Table V accordingly was a further anti-inflationary measure.

BOND PRICES AND YIELDS

Rates at which short term bills were issued continued through October 1946 at the same levels as in 1945. In November, however, they were slightly higher. Rates on medium and long-term obligations, after reaching the low levels in March and April, increased during the remaining months of the year. Yields on 3-5-year Treasury notes increased from .99 per cent in April to 1.24 per cent in October. Yields on long-term taxable bonds, due in 15 years and over, increased from 2.08 per cent in April to 2.28 per cent in September. In October and November, yields declined slightly, averaging 2.25 per cent in November. Yields on long-term bonds were generally lower than in 1945; those on 3-5-year notes were lower in the first half of the year but higher in September, October, and November than in the corresponding periods of the previous year.

Prices of government bonds declined from the peak of 106.61 reached in April to 103.25 in September. In October and November they averaged slightly higher than in September. Throughout the year prices were higher than in 1945.

The firming of rates after the first quarter of the year reflected the influence of the program of debt retirement by the Treasury and the increased demands for funds by business for new plant, equipment, and enlarged working capital.

Tables VII, VIII and IX show in detail the course of yields and prices by months in 1945 and 1946.

TABLE VII

AVERAGE YIELDS ON SHORT TERM OBLIGATIONS OF THE U. S. GOVERNMENT

(per cent per annum)

	1945		1946	
	New Issues of Treasury Bills	3–5 Year Taxable Notes	New Issues of Treasury Bills	3–5 Year Taxable Notes
January	.375	1.31	.375	1.10
February	.375	1.22	.375	1.03
March	.375	1.18	.375	.99
April	.375	1.14	.375	1.12
May	.375	1.16	.375	1.18
June	.375	1.16	.375	1.15
July	.375	1.16	.375	1.13
August	.375	1.17	.375	1.14
September	.375	1.19	.375	1.22
October	.375	1.17	.375	1.24
November	.375	1.14	.376	1.22
December	.375	1.15	—	—
Average	.375	1.18	—	—

TABLE VIII

AVERAGE YIELDS ON LONG-TERM U. S. GOVERNMENT BONDS [1]

(per cent per annum)

	1945	1946
January	2.44	2.21
February	2.38	2.12
March	2.40	2.09
April	2.39	2.08
May	2.39	2.19
June	2.35	2.16
July	2.34	2.18
August	2.36	2.23
September	2.37	2.28
October	2.35	2.26
November	2.33	2.25
December	2.33	—
Average	2.37	—

[1] Average of taxable bonds due in 15 years and over.

TABLE IX

UNITED STATES GOVERNMENT BOND PRICES [1]

(monthly average of daily figures)

	1945	1946
January	100.97	104.59
February	101.81	106.03
March	101.56	106.46
April	101.68	106.61
May	101.74	104.82
June	102.38	105.28
July	102.46	104.87
August	102.22	104.11
September	102.02	103.25
October	102.38	103.58
November	102.60	103.71
December	102.68	—
Average	102.04	—

[1] Average of taxable bonds due or callable in 15 years and over.

"INFLATIONARY" EXPANSION

"Inflationary" expansion continued to be a dominant problem in 1946. In January 1946, President Truman called attention in his budget message to the inflationary pressures then present, recommended against further tax reduction, and urged that a move be made toward debt retirement and a balanced budget. The fiscal policies subsequently adopted, including the debt retirement program that began in February and the executive action taken in the summer to place expenditure ceilings on some activities and to hold outlays well below the amounts available under appropriations already made, were designed in part as anti-inflationary measures.

A year later, in January 1947, the President again emphasized that the dangers from inflationary pressures were still present and recommended further curtailment of expenditures and the maintenance of taxes at the 1946 levels as the desirable steps in the fiscal program for fiscal 1948 to deal with them.

STATE FINANCES AND TAXATION

By Charles F. Conlon

Executive Director, Federation of Tax Administrators

GENERAL

State tax collections continued their upward surge during the fiscal year 1946 and again hit an all-time high. At the same time, latest available figures indicate that the gross debt of the states is still declining while balances in the general, highway, and post-war reserve funds continue to increase. On the other side of the books, state expenditures are rising; in addition to demands for new or expanded programs the states as employers of personnel and purchasers of material are affected by the higher prices prevailing generally.

For the immediate future the states' revenue structure appears to be adequate, and no sharp decline in yields is anticipated. The total amounts available for general fund expenditures in the states may be less in the next biennium than at present since the probabilities point to a more widespread use of dedicated revenues and shared taxes. Rising costs of materials and services, resumption of capital outlays and disbursements for veterans programs, particularly the military bonus, may be expected to add a considerable amount to the financial burdens of state governments in the near future.

REVENUES

The record high state tax collections reported by the Bureau of the Census for fiscal 1946 were made in spite of a decline in unemployment tax yields for the second successive year (Table I). Unemployment taxes aside, collections for the year exceeded those for 1945 by 13 per cent. This increase was contrary to general expectations in as much as budget estimates were in many instances revised in the late summer of 1945 to take into account an anticipated decline in income payments predicated on the expected wide-scale unemployment following the end of the war. Perhaps, too, there was some failure to appreciate fully the ability of the state tax system to respond to the increase in prices for many items. At any rate, pessimistic estimates of revenue yields in the last half of fiscal 1946 did not materialize. Cigarette taxes were increased in a few states during calendar 1945; otherwise there were no significant changes in rates to which the higher yields might be attributed.

Income tax collections, higher than ever before, almost doubled the yield of 1941 and brought in $500,000,000 more than in 1939. Corporate income tax collections were down slightly from the preceding year but this loss was more than offset by the $35,000,000 increase in individual income tax collections.

Gasoline tax collections were up $200,000,000 over the preceding fiscal year, and collections are now running at an annual rate in excess of that for 1942, the previous high year, despite a definite drop in the total number of motor vehicles registered. Sales taxes, up $125,000,000 over 1945, made their largest gain ever in a single year. The yield from this tax is about double that of 1939 even though rates have been lowered and exemptions increased in the intervening years. In particular states the following large increases in sales tax yields were noted: California, $28,000,000; Michigan, $19,000,000; and Illinois, $16,000,000. Indiana, whose gross income tax is usually classified among the sales taxes, was the only state reporting no significant gain over fiscal 1945.

Revenue from the sale of alcoholic beverages increased $90,000,000 over the previous year, and it is worthy of mention that applicable tax rates, Federal and state combined, are the highest ever imposed on this commodity in the United States. The yield of state tobacco taxes was $50,000,000 higher than in fiscal 1945, and the rate of current collections indicates another rise in fiscal 1947. The return to civilian status of several million members of the armed forces, who presumably smoked tax-free cigarettes, accounts in large part for the continually increasing yield in tobacco taxes.

Property taxes, down 17 per cent, continued a long-time trend emphasizing their relative unimportance in the overall state tax picture. In 1915 property taxes constituted 50 per cent of state tax collections while today, unemployment taxes excluded, they are but 5 per cent of the total.

There are reasonably good prospects that state tax collections will hover around present levels or at least not far below them. At a recent conference on revenue estimating sponsored by the Research Section of the National Association of Tax Administrators, it was suggested that somewhat lower yields might be anticipated in 1947 because of the expectation of some slight recession in business activity and a general re-adjustment of prices.

EXPENDITURES

State expenditures for the latest available year, 1945, continued their upward trend. Including provisions for debt service the figure for 1945 is $6,020,000,000 as against $5,500,000,000 for 1944 (Table II). Operating costs were $2,257,000,000, an increase of ap-

TABLE I

STATE TAX COLLECTIONS BY MAJOR SOURCE: 1938-1946*

(in millions)

	1946 (Prelim.)	1945	1944	1943	1942	1941	1940	1939	1938	Per Cent Change 1945–1946	Per Cent Distribution of Collection by Types of Tax, 1946
Total collections:											
Including unemployment compensation	$5953	$5603	$5407	$5113	$4993	$ 4507	$4157	$3884	$3834	6.2	100.0
Excluding unemployment compensation	4919	4350	4087	3941	3917	3606	3313	3085	3132	13.1	82.6
Sales:											
General sales, use or gross receipts	901	776	721	671	633	575	499	440	447	16.1	15.1
Motor vehicle fuels	900	696	690	777	942	913	839	801	777	29.3	15.1
Alcoholic beverages	400	310	267	280	256	216	193	174	175	29.0	6.7
Tobacco products	199	145	160	141	131	106	97	60	55	37.2	3.3
Income:											
Corporate	436	454	446	340	274	197	155	134	165	−4.0	7.3
Individual	395	360	316	293	249	225	206	197	218	9.7	6.6
Motor vehicles and operator's licenses	456	414	412	412	449	434	387	364	359	10.1	7.7
Property	227	276	247	258	271	268	260	259	244	−17.8	3.8
Death and gift	143	136	114	109	112	118	113	133	142	5.1	2.4
Severance	90	83	71	75	62	53	53	47	58	8.4	1.5
Other, except unemployment compensation[1]	772	699	644	585	538	501	511	476	492	10.4	13.0
Unemployment compensation	1034	1254	1319	1172	1076	901	844	799	702	−17.6	17.4

* Source: Bureau of the Census, *State Finances: 1946*, Vol. II, No. 1, Preliminary, and *1945*, Vol. II, No. 1.

[1] Includes taxes from the following sources: insurance premium, public utility gross receipts, pari-mutuels, admission and amusement sales, soft-drink sales, licenses for corporations in general alcoholic beverages, hunting and finishing, occupations, chain stores, amusements, and race tracks; poll, documentary and stock transfers, and miscellaneous taxes.

proximately 7 per cent. The principal increases in operating costs were in connection with highways, health, and public welfare. Operating costs of schools were practically unchanged.

Capital outlays were 18 per cent below those for 1944 but this declining trend was undoubtedly reversed in the current year. As a matter of fact, were it not for the extremely high prices in the construction field most of the states would have been fully embarked on the long-range capital outlay programs which were scheduled for undertaking immediately after the end of the war.

Some idea of the increase in construction costs may be gained from the following reports. A survey conducted among 107 cities by the American Public Works Association in October 1946 indicated that current labor costs were 22 per cent higher, and material and equipment costs were 21 per cent higher than in the previous year, and that bids averaged 28 per cent more than estimated costs. Data furnished by several state highway engineers and summarized in the June 1946 issue of *Better Roads* show current highway construction costs about 50 per cent over comparable costs in 1940.

Statistics recently released by the Bureau of the Census (*Government Employment*, Vol. 6, No. 5) show a continuing decline in the number of state employees, excluding schools, while payrolls have increased. For the month of July 1941 there were

TABLE II

STATE EXPENDITURES*

(in millions)

Character and Major Function	1945	1944	Per Cent Change 1944–1945	Per Cent Distribution 1945
Total general expenditure	$6029	$5959	1.2	100.0
Provision for debt retirement	220	225	−2.2	3.6
General expenditure less provision for debt retirement	5809	5734	1.3	96.4
Operation	2257	2104	7.3	37.4
General control	189	171	10.5	3.1
Public Safety	131	131	—	2.2
Highways	309	266	16.2	5.1
Natural resources	143	132	8.3	2.4
Health	94	70	34.3	1.6
Hospitals and institutions for the handicapped	284	264	7.6	4.7
Public Welfare	608	578	5.2	10.1
Correction	82	78	5.1	1.4
Schools	356	356	—	5.9
Libraries	3	3	—	0.1
Recreation	9	8	12.5	0.1
Miscellaneous	48	48	—	0.8
Capital Outlay	266	324	−17.9	4.4
Highways	222	281	−21.0	3.7
Other	44	43	2.3	0.7
Aid paid to local governments	1854	1795	3.3	30.8
Highways	302	306	−1.3	5.0
Public welfare	349	367	−4.9	5.8
Schools	831	806	3.1	13.8
Other	372	317	17.4	6.2
Interest[1]	82	93	−11.8	1.4
Contribution to trust funds and enterprises	1350	1417	−4.7	22.4

* Source: Bureau of the Census, *State Finances: 1945*, Vol. III, *1944*, Vol. III; revised total for 1944 used here.

[1] Includes direct payments and payments through sinking funds for general debt only. For remainder of debt service, see provision for debt retirement above.

569,000 employees as against 469,000 in July 1945. Payrolls in July 1941 totaled $64,200,000 as against $72,200,000 in July 1945.

State salary scales were generally increased during the war, usually on a temporary basis. The Council of State Governments estimated that the overall wartime salary adjustment was not in excess of 15 per cent. Permanent adjustments will doubtless receive consideration in forthcoming legislative sessions.

In addition to the increases in operating costs arising out of higher prices generally, the states will meet with requests to expand educational and welfare programs, provide housing and veterans aid, and pay a military bonus.

Illinois, Massachusetts, Michigan, New Hampshire, Rhode Island, and Vermont are paying or have approved the payment of the military bonus. The estimated cost for these states is $863,000,000. New York has taken the first steps looking to the payment of some $400,000,000. Including the latter, the estimated cost in sight in these seven states is $1,263,000,000 which may be compared to total state tax collections of $1,305,000,000 in 1925 and $1,724,000,000 in 1933. Only in Maine, have the voters failed to approve the bonus. Of the three bonus propositions approved by the voters in November 1946 elections, only one law contained provisions for financing the outlay. On the basis of these developments therefore, a strong pressure for similar bills is foreseen in the 44 legislatures convening in 1947.

State aid to local governments grows in amount yearly, and there is no prospect that this trend will reverse itself. The adoption of the Moore Plan in New York with its fixed per capita payments to localities was a departure from established methods. However, present indications are that legislatures will be faced with requests for the sharing of state-collected taxes with the local governments. In many states, the municipal governments particularly have gone on record favoring the shared tax as a means of relieving their financial problems.

FINANCIAL POSITION

From the standpoint of total outstanding debt and available balances in general and special funds, the states are in a much sounder financial position than either the local governments or the Federal Government. For several years past, debt has declined and balances increased. The latest available data for the states as a whole show that gross debt declined $268,000,000, or 9.6 per cent in the year 1945 as compared to 1944 (Table III). During the same period balances in general highway and post-war reserve funds increased about $597,000,000 or 36 per cent (Table IV). From 1943 to 1945 there was an increase of about 107 per cent in the total of these funds. Roughly, half of these balances, on an overall basis, are in the general funds. Balances in unemployment compensation funds increased 25 per cent in 1945 while sinking fund balances declined 6 per cent (Table V).

As a practical matter, however, these balances are subject to numerous obligations. State institutions and plant deteriorated during the war. Little or no additional plant was built during that period. Deferred maintenance, plus the normal increment to state plant and institutions, will have to be provided in the relatively near future, and in this sense balances in general funds are for all practical purposes obligated even though not yet appropriated or earmarked. The same situation obtains with respect to highway construction and highway fund balances, while the numerous propositions for aid to veterans, including loans, business aids, and housing, will impose a heavy charge on postwar reserves now available.

LEGISLATION

General.—While 1946 is classed as an off-year for state legislatures nevertheless 25 of them met in regular and special sessions. Various emergencies, including housing and veterans' legislation, accounted for the numerous special sessions which in some states ran as high as three. Tax legislation was on the whole not significant. On

TABLE III

GROSS DEBT OF INDIVIDUAL STATES, 1944-1945*

(Amount in millions)

State	Gross Debt		Change: 1944–1945	
	June 30, 1945	June 30, 1944	Amount	Per Cent
Total	$2,524.7	$2,792.5	267.8	−9.6
New York	572.0	612.9	40.9	−6.7
Pennsylvania	178.0	189.9	11.9	−6.3
California	172.9	242.8	69.9	−28.8
Louisiana	162.7	168.6	5.9	−3.5
Arkansas	139.8	144.4	4.6	−3.2
Illinois	115.2	125.1	9.9	−7.9
North Carolina	111.3	120.0	8.7	−7.3
South Carolina	81.9	82.4	0.5	−0.6
Tennessee	79.4	84.2	4.8	−5.7
New Jersey	76.1	99.0	22.9	−23.1
Minnesota	75.1	82.4	7.3	−8.9
Missouri	73.5	80.9	7.4	−9.2
Mississippi	72.5	74.4	1.9	−2.6
West Virginia	71.3	75.1	3.8	−5.1
Massachusetts	70.3	80.0	9.7	−12.1
Alabama	65.8	71.8	6.0	−8.4
Maryland	38.5	43.8	5.3	−12.1
Oklahoma	27.5	29.9	2.4	−8.0
Rhode Island	25.3	27.6	2.3	−8.3
South Dakota	25.3	27.7	2.4	−8.7
Virginia	24.2	26.1	1.9	−7.3
Connecticut	23.6	25.2	1.6	−6.4
New Mexico	23.0	24.8	1.8	−7.3
Oregon	20.3	24.7	4.4	−17.8
North Dakota	19.9	21.3	1.4	−6.6
Maine	19.2	21.2	2.0	−9.4
Colorado	18.3	20.1	1.8	−9.0
Michigan	16.1	23.5	7.4	−31.5
Georgia	15.2	18.6	3.4	−18.3
Washington	13.0	14.5	1.5	−10.4
New Hampshire	14.4	16.2	1.8	−11.1
Texas	12.0	14.6	2.6	−17.8
Montana	11.7	12.3	0.6	−4.9
Kansas	11.5	12.9	1.4	−10.9
Ohio	10.9	11.6	0.7	−6.0
Indiana	6.4	6.9	0.5	−7.3
Kentucky	6.1	6.9	0.8	−11.6
Delaware	4.5	4.7	0.2	−4.3
Wisconsin	3.9	4.2	0.3	−7.2
Vermont	3.4	4.4	1.0	−22.7
Arizona	3.3	3.5	0.2	−5.7
Wyoming	3.2	3.5	0.3	−8.6
Utah	2.0	2.2	0.2	−9.1
Iowa	1.4	1.6	0.2	−12.5
Florida	1.3	1.3	0.0	0.0
Nebraska	1.0	1.1	0.1	−9.1
Idaho	.5	1.4	0.9	−64.3
Nevada	.0	.0	.0	.0

* Source: Bureau of the Census, *State Finances: 1945*, Vol. III, Preliminary.

the expenditure side several legislatures approved bills to submit proposed commitments on behalf of veterans to the voters. There were no new enactments or repeals in states imposing income, general sales, and tobacco taxes.

Alcoholic Beverages.—A special additional tax was levied on wholesalers and retailers of liquor in South Carolina. The wholesaler must absorb the tax of from $.25 to $1 per case and the retailer must do likewise on a tax of $1 per case. Neither tax may be added to the consumer's price. In Louisiana the parishes and municipalities were authorized to impose a gallonage tax.

TABLE IV

TOTAL BALANCES FOR GENERAL, HIGHWAY, AND POST-WAR RESERVE FUNDS, 1943-1945*

(Amount in millions)

Balances in	1945	1944	1943	Per Cent Change From 1944 to 1945	Per Cent Change From 1943 to 1945	Per Cent Change From 1943 to 1944
Total	$2,274	$1,677	$1,100	36	107	53
General funds	1,188	1,035	636	15	87	63
Highway funds	550	486	375	13	47	30
Postwar reserve funds	536	156	89	243	501	75

* Source: Bureau of the Census, *State Finances: 1945*, Vol. II, No. 4.

Banks.—Missouri imposed a 7 per cent income tax on financial institutions, and New Jersey passed a new financial business law taxing the net worth of competitors of national banks. Cities in Virginia were authorized to levy local taxes on bank shares.

Corporation Taxes.—There were few changes other than of a technical nature affecting franchise taxes measured by property or income, or corporate income taxes. However, assessment and collection practices under the Louisiana franchise tax were completely revised, and New York provided that combined rather than consolidated reports should be required from related corporations. The question of cooperatives was considered in Mississippi where a new law makes non-profit electric cooperatives subject to tax on income derived from sales of commodities or merchandise as a business. The tax status of cooperatives will be investigated in several legislatures in 1947 if present indications are accurate.

Personal Income Taxes.—Personal exemptions were increased in Missouri as follows: single $1,000 to $1,200; married $2,000 to $2,400; dependents $200 to $400. Mississippi granted a $1,000 exemption to estates and trusts. Kentucky changed its method of personal exemption to provide for a specific credit against the computed tax. New York returned to its former practice of taxing residents on total income and allowing non-residents a credit against taxes paid to other states. Louisiana, on the other hand, enacted a law to grant its residents credit on taxes paid elsewhere. The simplified return, patterned after the short Federal return, was made op-

TABLE V

BALANCES IN UNEMPLOYMENT COMPENSATION AND SINKING FUNDS, 1943-1945*

Balances in	1945	1944	1943	Per Cent Change From 1944 to 1945	Per Cent Change From 1943 to 1945	Per Cent Change From 1943 to 1944
Unemployment compensation funds	$6,452	$5,159	$3,818	25	69	35
Sinking funds	642	684	617	−6	4	11

* Source: Bureau of the Census, *State Finances: 1945*, Vol. II, No. 4.

tional in Kentucky, while numerous technical changes affecting deductions, exclusions, dependents, and filing requirements were made in Louisiana, Mississippi, New York, and Virginia.

Inheritance, Estate, and Gift Taxes.—Reciprocal exemption of charitable transfers to domiciliaries of other states was authorized in South Carolina, while the apportionment of Federal and state estate taxes was regulated by laws in Connecticut and Virginia.

Motor Fuel Taxes.—New taxes on motor carriers were introduced in Mississippi and Virginia. The intent of both statutes is to require carriers using the highways of the state to pay a tax on the motor fuel consumed thereon. Purchase of tax-paid gasoline within the state commensurate with travel within the state is one method provided to discharge the tax liability. Otherwise a report and payment of tax are required. The Mississippi law provides for a differential of $0.01 additional if motor fuel other than gasoline is used by the carrier. Georgia and Kentucky were added to the states granting refunds on gasoline used for agricultural non-highway use. One cent of the tax is retained by the state in Georgia, and 10 per cent of the tax is withheld in Kentucky. The exemption method for non-highway use in North Dakota was repealed by the voters in that state, and after the first of the year the tax will have to be paid and a claim for refund filed. Kansas and Oklahoma are now the only states using the exemption method. Revenue-wise, numerous other changes in gasoline tax laws were unimportant.

Miscellaneous.—Missouri enacted a new classified property tax law. Intangibles are now taxed at the rate of 4 per cent of yield. Veterans' exemptions from property taxes continued in number. Massachusetts, New Jersey, and Rhode Island increased the states' share of pari-mutuel pool, by raising the tax or taking some of the breakage. Virginia apples will be taxed 1¼ cent per bushel to promote the sale and consumption of this commodity through advertising.

Referenda.—In addition to the bonus proposals mentioned previously, voters approved the following expenditures: California, $100,000,000 increase in funds for loans to veterans to purchase homes and farms; New Jersey, $35,000,000 for veterans' emergency housing; Texas, $25,000,000 to finance land purchases for resale to veterans. California rejected a proposal to make business loans to veterans. Louisiana increased homestead exemptions for veterans from $2,000 to $5,000 for the period 1941-52. Increased state financing for school purposes was approved in California, Michigan, Oregon, and Utah. Specific revenues were dedicated for that purpose in both Michigan and Utah.

TAX RATE CHANGES

There were few changes in tax rates during the year 1946. The tables (V through XII) in The American Year Book for 1945 remain substantially unchanged with the following exceptions:

Arizona

Exercises on alcoholic beverages increased 50 per cent.

Illinois

Tax on cigarettes increased to .03 after December 31, 1946.

Massachusetts

Additional 1½ per cent imposed on corporate incomes for the years 1947-50 in place of the 2½ per cent additional enacted in 1945.

Mississippi

Rate on motor fuels other than gasoline increased from .06 to .07.

New York

Permanent 4½ per cent rate on corporate income reinstated.

Personal income tax reduced 50 per cent for years 1945 and 1946.

(Reduction of 25 per cent previously in effect.)

Oklahoma

Temporary additionl 2¢ tax on gasoline expires Dec. 31, 1946.

Virginia

Motor fuel tax rate increased from .05 to .06.

SUPREME COURT DECISIONS

Five tax cases presented to the United States Supreme Court involved immunities founded on the constitutional relationships between the Federal and state governments. The most widely noticed, *New York* v. *United States*, concerned a Federal tax on spring water bottled and sold by the state of New York. The tax was upheld. There were four opinions handed down with no clear cut basis of decision since the non-dissenting justices were agreed only on the point that the previous test of validity, *i.e.* whether the activity was governmental or proprietary, was no longer tenable. In another case the Court said that the Pennsylvania definition of real property governed the application of a Federal statute within that state (*Reconstruction Finance Corporation* v. *Beaver County*). The RFC is exempt from personal property taxes, while under Pennsylvania law machinery essential to the operation of a factory is considered as real property. Other rulings upheld the taxation of property sold conditionally by the United States with reservation of title for purpose of security (*S. R. A.* v. *Minnesota*); the application of the Arkansas severance tax to lumber cut by private contractors within a Federal area (*Wilson* v. *Cook*); and the imposition of Oklahoma motor fuel taxes on gasoline used by a Federal contractor within a Federal area (*Sanders* v. *Oklahoma Tax Commission*—certiorari denied). Doubts as to the constitutionality of state taxes on insurance premiums which arose after the *Southeastern Underwriters* decision were dispelled in *Prudential Insurance Co.* v. *Benjamin,* wherein the Court construed the McCarran-Ferguson Act to mean that the business of insurance even though transacted in interstate commerce does not require uniformity of treatment.

In two other cases before the Supreme Court it was decided that the Indiana gross income tax may not be applied to the proceeds of a sale of securities on the New York Stock Exchange (*Freeman* v. *Hewit*) and that the California retail sales tax as applied to a sale of oil to the New Zealand government was in violation of the constitutional prohibition against a tax on exports. A drummer type license ordinance was struck down (*Nippert* v. *City of Richmond*), and in another case (*West Publishing Co.* v. *McColgan*) the Court approved a California ruling that a formula method of apportioning income derived from interstate operations may be required even though the taxpayer maintains separate accounting for operations in various localities.

STATE COURT DECISIONS

Among the more important of the decisions of the state courts were the ruling that the Arkansas sales tax act is not applicable to a sale technically consummated outside the state (*Commissioner of Revenue* v. *Hollis*); a similar ruling in Arizona (*Pratt-Gilbert Hardware Co.* v. *O'Neil*); approval of the South Carolina refund law on gasoline used for agricultural purposes (*State ex rel Edwards* v. *Query*); affirmance of the taxability of contractor-occupied but government-owned factory property in Washington (*Boeing Aircraft Co.* v. *Reconstruction Finance Corporation*), and the striking down of the third Kentucky chain store tax statute on constitutional grounds (*Reeves* v. *Adam Hat Stores Inc.*).

TAX STUDY COMMISSIONS

The existence of many fiscal problems—state and local tax relations, the financing of schools and welfare functions, veterans' programs, concern about the tax base in the near future and other such questions—account for the number of tax study commissions now in operation. At least 13 states have officially appointed commissions of this type. Most of them expect to complete reports and recommendations in time for action at the 1947 legislative sessions. These states are Alabama, Florida, Indiana, Iowa, Louisiana, Maryland, Michigan, Ohio, Oregon, Rhode Island, Utah, Virginia, and Vermont. Some reports have already been issued, as in Utah where the commission's report was received by the legislature and propositions for amendment of school finance arrangements were formulated and placed on the ballot for approval by the voters at the November election. The Sherbow Commission report in Maryland makes comprehensive recommendations for adjusting state and local financial relations. The Iowa commission has already issued its preliminary report with recommendations for the improvement of the state's tax structure.

Among the specific subjects under study are the tax status of cooperatives, the sharing of state revenues with municipalities, assessment of public service corporations, unified revenue administration, statewide assessment of real estate, and the effect of tax limitation. The outstanding development from the field of tax study commissions was the implementation in 1946 by the New York state legislature of the report of the Moore Commission. The essence of the plan, as mentioned previously, lies in the provision of fixed per capita payments to the localities in lieu of shared tax revenues. The operation of the system will be watched carefully since it is the first comprehensive plan of adjustment of state and local fiscal relations to be placed in operation.

ADMINISTRATION

The Department of Revenue was created, effective July 1, in Missouri. The new department assumed powers in tax administration formerly exercised by the auditor, treasurer, and other agencies and became as well the central fiscal department of the state by virtue of the budgetary and purchasing functions assigned to it.

The office of Motor Vehicle Controller was created in Mississippi to take over administration of the motor fuel tax, and the motor vehicle privilege taxes and licenses. The law creating the office is notable for its detail with respect to the number of persons to be employed therein, and their salaries and duties.

Changes were made in the internal organizations of the tax departments of Connecticut, Kentucky, and Vermont. These involved chiefly the formation of new divisions or the reallocation of responsibilities within the department.

MUNICIPAL FINANCE

By H. K. Allen

Professor, University of Illinois

The highlights in Municipal Finance for the year 1946 were a further increase in operating expenditures, a continued low-level of tax delinquency, and an increase in new bond issues. The increase in operating expenditures results from the higher cost of materials and supplies and salary increases. The increase in bond issues reflects the launching of postwar public works projects.

EXPENDITURES

The most recent year for which the comprehensive statistics of the Bureau of the Census in final report form are available is 1944.

While some of the absolute expenditures just noted may appear large, yet too great significance should not be attached to them. The size of an expenditure becomes intelligible in terms of service when one discovers the number among whom it is divided. The per capita expenditures of cities, both as a whole and for particular items, have varied greatly from time to time, but the general tendency has been to increase. The latest year for which per capita figures are available is 1942. The following table shows the change in per capita expenditures for selected years:

MUNICIPAL EXPENDITURES

(000 omitted)

Operation and Maintenance, by Major Functions[1]

Year	Total	General Government	Public Safety	Health and Sanitation	Highways
1944	$1,904,844	$163,463	$474,681	$309,147	$139,996
1943	1,873,086	157,393	466,056	282,722	136,008
1942	1,546,634	125,903	358,937	137,228	93,512
1940	2,193,915	168,712	350,462	139,498	108,537
1938	2,167,459	163,089	346,168	136,956	111,979
1936	1,838,803	150,213	317,154	141,207	108,910
1934	1,744,975	135,766	298,758	134,296	111,306
1932	1,806,517	149,909	328,797	160,010	127,670
1929	1,730,288	140,521	339,816	174,858	147,375
1927	1,562,615	136,848	315,362	160,259	137,892
1924	1,287,484	111,856	259,275	130,388	109,807
1922	1,155,691	105,174	234,199	115,488	98,763
1919	697,319	72,585	146,763	75,847	65,003
1915	546,568	62,793	120,696	55,758	60,615
1911	452,899	53,766	106,120	45,691	52,214
1907	367,367	42,703	87,885	36,899	42,718
1903	278,173	30,842	71,020	25,807	34,208

[1] Statistics for 1943 and 1944 are for all cities having a population over 25,000; statistics for 1932 to 1942 are for cities having a population over 100,000. All other data are for cities over 30,000. Because of some changes in the basis of classification, the figures for 1938, 1940, 1942, 1943, and 1944 are not strictly comparable with those for earlier years. In 1943 and 1944, expenditures for hospitals were included with those for health and sanitation. Beginning in 1937, the financial statistics of public-service enterprises were reported separately from those of general government.

Year	Charities, Hospitals, and Corrections	Schools	Libraries	Recreation	Miscellaneous
1944	$204,788	$453,384	$30,226	$74,908	$ 54,251
1943	228,653	454,624	28,635	68,080	50,915
1942	345,841	377,123[1]	21,339	55,737	31,014
1940	500,003	631,432	25,813	65,679	203,779
1938	508,134	625,032	25,519	64,946	185,637
1936	366,466	571,922	21,119	52,303	109,504
1934	345,214	526,864	20,271	48,306	124,194
1932	234,419	629,353	......[1]	63,117	113,242
1929	116,147	622,587	23,029	61,863	94,091
1927	99,806	560,668	20,167	53,839	77,731
1924	79,239	475,725	15,782	41,819	63,590
1922	76,627	422,843	14,326	38,703	49,603
1919	53,262	216,701	9,079	24,204	33,870
1915	38,285	162,332	7,134	20,416	18,535
1911	30,647	127,604	5,939	17,114	13,801
1907	24,408	102,395	4,989	11,794	13,572
1903	18,280	80,853	4,067	7,457	5,634

[1] Expenditures for schools from 1942 to 1944 include those for city corporation only, whereas data for earlier years include independent school districts. Expenditures for libraries and schools were combined in 1932.

IMPORTANCE OF DIFFERENT MUNICIPAL EXPENDITURES

There is a wide difference in the importance attached to the different functions performed by municipalities. While over a period of years there has been some change in the relative importance of some of the items, it is interesting to note that expenditures for education, except for the last three years, were always larger than any other, and that the

VII. PUBLIC FINANCE AND TAXATION

PER CAPITA EXPENDITURES

Year	Total	General Government	Public Safety	Health and Sanitation	Highways	Charities, Hospitals, and Corrections	Education		Recreation**	Miscellaneous*
							Schools*	Libraries**		
1942	$40.71	$3.31	$9.45	$3.61	$2.46	$ 9.10	$ 9.93	$.56	$1.47	$ .82
1940	57.75	4.44	9.22	3.67	2.86	13.16	16.62	.68	1.73	5.37
1938	57.36	4.32	9.16	3.62	2.96	13.45	16.54	.68	1.72	4.92
1936	48.83	3.99	8.43	3.75	2.89	9.73	15.19	.56	1.39	2.91
1934	46.43	3.61	7.95	3.57	2.97	9.18	14.56	...	1.29	3.30
1932	47.87	3.97	8.71	4.24	3.38	6.21	16.68	...	1.67	3.00
1929	43.45	3.66	8.46	4.33	3.70	2.78	16.14	.59	1.55	2.25
1927	40.77	3.46	8.13	4.13	3.60	2.49	15.08	.53	1.40	1.94
1924	35.61	3.01	7.10	3.55	3.07	2.08	13.52	.44	1.15	1.67
1922	33.15	2.94	6.66	3.25	2.87	2.08	12.50	.41	1.09	1.34
1919	21.63	2.22	4.53	2.34	2.04	1.59	6.88	.28	.74	1.01
1915	18.45	2.10	4.06	1.86	2.06	1.26	5.58	.24	.68	.61
1911	17.62	2.08	4.12	1.77	2.04	1.17	5.04	.23	.65	.53
1907	15.95	1.86	3.80	1.59	1.91	1.05	4.42	.21	.51	.59
1903	13.19	1.46	3.35	1.21	1.64	.86	3.86	.10	.35	.27

* Payments for pensions are included in column "Miscellaneous" for the years 1911 to 1927, inclusive; for the years 1903 to 1909, inclusive, they are included with expenses of police, fire, and school departments.

** Payments for expenses of art galleries and museums are included in column "Recreation" for the years 1911 to 1927 inclusive; for the years 1903 to 1909 inclusive, they are included with the expenses of libraries; expenditures for libraries and schools are combined for the years 1932 and 1934.

relative importance of this item up to 1932 tended to increase with the years. The most significant development in recent years, it will be noted, is the increase in expenditures for public safety. The following table shows the relative importance of the different services over a period of years:

PERCENTAGE OF EXPENDITURES FOR DIFFERENT FUNCTIONS

Year	General Government	Public Safety	Health and Sanitation*	Highways	Charities, Hospitals, and Corrections*	Education		Recreation	Miscellaneous
						Schools*	Libraries*		
1944	8.6	25.0	16.2	7.3	10.8	23.8	1.6	3.9	2.8
1943	8.4	24.9	15.1	7.3	12.2	24.3	1.5	3.6	2.7
1942	8.1	23.2	8.9	6.0	22.4	24.4	1.4	3.6	2.0
1940	7.7	16.0	6.3	4.9	22.7	28.8	1.2	3.0	9.4
1938	7.5	16.0	6.3	5.2	23.4	28.8	1.2	3.0	8.5
1936	8.2	17.2	7.7	5.9	19.9	31.1	1.1	2.8	6.0
1934	7.8	17.1	7.7	6.4	19.8	31.4	...	2.8	7.1
1932	8.3	18.2	8.9	7.1	13.0	34.8	...	3.5	6.3
1929	8.4	19.5	10.0	8.5	6.4	37.2	1.4	3.6	5.2
1927	8.5	20.0	10.1	8.8	6.6	37.0	1.3	3.4	4.8
1924	8.5	19.9	10.0	8.6	5.9	38.0	1.2	3.2	4.7
1922	8.9	20.1	9.8	8.7	6.3	37.7	1.2	3.3	4.0
1919	10.2	21.0	10.8	9.4	7.3	31.8	1.3	3.4	4.7
1915	11.4	22.0	10.1	11.2	6.8	30.2	1.3	3.7	3.3
1911	11.8	23.4	10.1	11.6	6.6	28.6	1.3	3.7	3.0
1907	11.7	23.8	9.9	12.0	6.6	27.7	1.3	3.2	3.6
1903	11.1	25.3	9.2	12.4	6.5	29.3	1.5	2.7	2.1

* Expenditures for hospitals are included with those for health and sanitation in 1943 and 1944. Percentages for schools and libraries combined for the years 1932 to 1935.

SOURCES OF REVENUE

The revenue of cities arises from a number of sources. In most cities more than 90 per cent of the funds which go into the general revenue fund come from the general property tax. This is a tax levied against real and personal property. In addition to the general property tax, the Census Bureau designates certain taxes as special property taxes. Such include taxes upon the capital stock of corporations, upon savings banks and other financial institutions, and upon insurance companies. Included in this, also, would be taxes levied upon mortgages at time of recording, taxes upon incomes and estates and on investments, and a wide range of specific taxes.

In many cities, also, some form of poll tax continues to be used, although such taxes are much less important than formerly. No generalization can be made as to method of levy since this varies greatly from city to city. In addition, business and non-business license taxes make up a large group of levies upon different types of business activities, some of which, of course, are levied primarily for regulative purposes. The latter include such levies as those upon dogs, dance halls, etc. Receipts from special assessments constitute an important item, but they do not enter the general revenue fund. In some places at a particular time subventions and grants are an important source of income, while in some cities, also, the earnings from public enterprises are not unimportant. The relative importance of major sources of revenue over a period of years is shown in the following table:

PERCENTAGE OF RECEIPTS FROM DIFFERENT SOURCES OF REVENUE

Year	The General Property Tax	Other Taxes and Licenses	Special Assessments	Subventions and Grants, Donations and Pension Assessments	Earnings of Public Service Enterprises[2]	Other Revenues
1944[1]	64.8	9.2	1.1	18.9	....	6.0
1943[1]	66.3	9.2	1.0	17.9	....	5.6
1942[1]	65.2	9.8	1.2	17.4	....	6.4
1940	63.4	7.7	1.0	18.3	....	9.6
1938	64.7	8.1	1.1	16.1	....	10.0
1936	59.7	7.9	1.6	14.3	10.4	6.1
1934	62.6	5.3	2.2	13.5	9.8	6.6
1932	66.2	4.7	3.9	8.5	9.3	7.4
1929	64.7	6.4	7.2	5.8	9.8	6.1
1927	66.1	5.7	7.7	4.9	9.6	6.2
1924	66.1	5.7	5.9	5.3	10.3	6.8
1922	66.9	5.2	4.8	5.9	9.0	8.2
1919	66.0	7.6	5.6	4.1	10.2	6.4
1915	62.4	7.8	8.5	4.2	10.0	6.9
1911	61.9	8.7	8.4	4.6	10.6	5.8
1907	59.4	10.6	8.2	4.8	11.2	5.8
1903	61.4	9.8	7.6	4.3	11.5	5.5

[1] For all cities having population over 25,000. Statistics for 1932 to 1940 are for cities having population over 100,000. For years prior to 1932, data are for cities over 30,000.

[2] Listed separately in years 1937 to 1944.

PER CAPITA TAX BURDEN

That the tax burden imposed by cities has been increasing much more rapidly than population is readily seen when one notes the change in the per capita amounts collected from different sources over a period of years. The latest year for which per capita figures are available is 1942.

MUNICIPAL INDEBTEDNESS

Receipts from sources of revenue may either just pay expenses, more than pay expenses, or fail to pay them. In many cases the administra-

PER CAPITA RECEIPTS FROM DIFFERENT SOURCES

Year	Total	The General Property Tax	Other Taxes and Licenses	Special Assessments	Subventions and Grants, Donations and Pension Assessments	Earnings of Public Service Enterprises[2]	Other Revenues
1942[1]	$49.79	$32.45	$4.89	$....	$ 8.65	$....	$3.80
1940	74.15	47.04	5.71	.71	13.52	....	7.17
1938	74.28	48.02	5.97	.82	11.99	....	7.48
1936	76.83	45.83	6.03	1.21	10.95	8.03	4.78
1934	72.13	45.17	3.77	1.61	9.71	7.09	4.78
1932	68.82	45.57	3.24	2.70	5.84	6.42	5.03
1929	69.63	45.07	4.43	5.01	4.02	6.82	4.28
1927	69.77	46.09	3.95	5.36	3.40	6.67	4.29
1924	58.41	38.59	3.33	3.43	3.12	6.00	3.96
1922	53.57	35.85	2.80	2.58	3.13	4.83	4.38
1919	35.26	23.29	2.68	1.98	1.43	3.61	2.27
1915	30.00	18.73	2.36	2.54	1.26	3.03	2.08
1911	28.07	17.37	2.44	2.35	1.30	2.98	1.63
1907	24.67	14.64	2.63	2.02	1.18	2.77	1.43
1903	21.14	12.98	2.06	1.60	.91	2.42	1.16

[1] For all cities having population over 25,000. Statistics for 1932 to 1940 are for cities having population over 100,000. For years prior to 1932, data are for cities over 30,000.

[2] Listed separately in years 1937 to 1942.

tors of the finances have planned for a surplus but because of a shrinkage in revenue have had to resort to borrowing.

In the calculations of the Census Bureau, municipal indebtedness is divided into two distinct groups, long-term obligations and short-term loans. The former includes all obligations which have a number of years to run and for the redemption of which no assets other than a sinking fund or earnings of public-service enterprises have been specifically designated. The latter, on the other hand, includes such indebtedness as is evidenced by warrants, accounts payable, and other short-term obligations. The adjoining table shows the net indebtedness for certain years.

MUNICIPAL INDEBTEDNESS

(000 omitted)

Year	Net Long-Term Debt	
	Amount	Per Capita
1944[1]	$5,379,680	$.....[1]
1943[1]	6,451,536	169.86
1940	6,746,826	177.60
1938	6,470,850	171.23
1936	6,331,516	168.13
1934	6,380,478	169.76
1932	6,289,078	166.66
1930	5,967,563	153.02
1929	5,529,835	144.33
1927	4,943,507	134.27
1924	3,481,980	110.09
1922	3,280,645	97.57
1919	2,541,172	81.18
1915	2,245,906	77.86
1911	1,808,828	67.52
1907	1,808,878	56.04
1903	933,004	44.71

[1] For all cities having population of more than 25,000. Statistics for years 1932 to 1940 are for cities having population over 100,000. For years prior to 1932, data are for cities over 30,000. Per capita figures not available for 1944.

DEVELOPMENTS IN THE BOND MARKET

The aggregate disposals of long-term obligations by municipalities for the first ten months of each year for a series of years are shown in the table on page 269. Total issues for the months covered increased from $641,779,000 in 1944 to $671,251,000 in 1945.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS

The table showing municipal bond issues does not include the extension grants made to municipalities for public-works projects by the Federal Emergency Administration of Public Works. This agency was created by the National Industrial Recovery Act

MUNICIPAL BOND ISSUES

(000 omitted)

Year	Total First Ten Months	Year	Total First Ten Months
1946	$ 919,280	1929	$1,055,135
1945	671,251	1928	1,094,074
1944	641,779	1927	1,297,029
1943	380,990	1926	1,149,105
1942	488,415	1925	1,174,724
1941	823,115	1924	1,280,504
1940	954,593	1923	850,952
1939	956,386	1922	990,188
1938	800,606	1921	868,392
1937	769,778	1920	570,109
1936	955,500	1919	581,871
1935	973,869	1918	245,789
1934	725,660	1917	402,828
1933	392,580	1916	402,548
1932	701,938	1915	434,829
1931	1,156,129	1914	423,171
1930	1,211,857	1913	327,902

Source: *Commercial and Financial Chronicle.*

which became effective June 16, 1933. Under Title II of this act, authority was granted to the administrator to provide grants, not subject to repayment, for 30 per cent of the total expenditures incurred for the payment of labor and material costs on approved public-works projects. Moreover, the agency was authorized to accept 4 per cent general obligation or revenue bonds of the municipalities as security for the loan portion of the allotment. In 1934, Congress authorized the Reconstruction Finance Corporation to purchase marketable securities from the Public Works Administration and provided that moneys realized by the Public Works Administration from such sales might be used for making additional loans, but not grants, in aid of non-Federal public-works projects under Title II of the National Industrial Recovery Act.

In addition to the program of public works administered under Title II of the National Industrial Recovery Act, the Public Works Administration carried on a separate program pursuant to the Emergency Relief Appropriation Act of 1935. Under the latter act the amount of the grant was fixed by administrative determination at 45 per cent of the cost of the project, with a corresponding reduction in the amount to be furnished by the applicant. Provision was made under this act for the sale of bonds acquired as collateral for municipal loans either on the open market or to the Reconstruction Finance Corporation, the proceeds to be used only for the making of loans. In practice, the sales were confined to the Reconstruction Finance Corporation which, in turn, sold the securities on the open market.

TAX DELINQUENCY

Tax delinquency is a natural phenomenon of a business depression, and a rising trend of tax delinquency inevitably cripples municipal functions and weakens municipal credit. During periods of prosperity, on the other hand, tax delinquency drops sharply. Dun and Bradstreet has made a study of the trend of median year-end tax delinquency in 150 cities over 50,000 population for the 13-year period from 1930 to 1944. The following percentages show the median delinquency on the current tax levy at the end of each fiscal year:

1944	1941	1938	1935	1932
3.90%	6.80%	10.7%	18.0%	19.95%
1943	1940	1937	1934	1931
4.70%	8.70%	11.3%	23.05%	14.60%
1942	1939	1936	1933	1930
6.00%	9.25%	13.9%	26.35%	10.15%

These figures show a substantial gain in collections since 1933; delinquency in 1944 was lower than it was in 1930. Only fragmentary data are available for 1945 and 1946, but it is believed that little change has occurred since 1944.

DEBT DEFAULTS

The *Bond Buyer* estimated, with certain reservations, that 131 cities and towns were in default on their bonds on Dec. 1, 1946. This represents a significant reduction from the previous year when 152 incorporated places were in default. The following states, according to the *Bond Buyer,* had the largest number of defaults:

Florida	43	North Carolina	9
Texas	23	Michigan	5
Pennsylvania	10	Oklahoma	5
Colorado	10	Minnesota	4

It is significant to note that Florida and North Carolina, included in the above group, had large increases in local indebtedness between 1912 and 1932, the percentages being 2,779.01 and 1,300.8, respectively. The indebtedness of Maine during the same period increased only 73.2 per cent, while that of Massachusetts increased only 99.2 per cent. Maine had one incorporated place in default in 1944 and Massachusetts had none. While no data are available regarding the volume of municipal bonds in default, it can reasonably be stated that the volume of such defaults has declined during the past year.

DEBT ADJUSTMENT LEGISLATION

For the purpose of aiding municipalities which are in default on their obligations, various states have recently passed state receivership and debt adjustment acts. Boards or commissions have been established to supervise local indebtedness in general, to supervise the refunding of municipal bonds, and to act as receivers in event of failure to meet debt service.

A Federal Municipal Bankruptcy Act was enacted May 24, 1934. This Act, which was declared unconstitutional by the Supreme Court of the United States in May, 1936, was designed to enable any taxing district, with the consent of its creditors and the approval of a Federal District Court, to adjust its debt structure. According to the *Bond Buyer,* only 27 cities, one county, one school district, 41 irrigation districts, and one road district filed petitions under the Municipal Bankruptcy Act during the two years which the law was in effect.

On Aug. 16, 1937, President Roosevelt signed a new Municipal Bankruptcy Act, designed to replace the original measure which was declared unconstitutional. The present law is similar in its provisions to the invalidated law. It provides a procedure whereby insolvent taxing agencies, such as local drainage, levee, irrigation, road, and sewer districts, as well as towns, boroughs, and municipalities, may effect compositions with their creditors. These compositions are approvable only when the districts or agencies file voluntary proceedings in bankruptcy accompanied by plans approved by 51 per cent of all the creditors of the district or town. The plan of composition can not be confirmed unless accepted in writing by creditors holding at least 66 2/3 per cent of the aggregate amount of the indebtedness of the petitioning district or taxing agency, unless the judge is satisfied that the taxing districts were authorized by law to carry out the plan and there had been a finding by the Court that the plan was fair, equitable, and for the best interests of the creditors. According to Edwin L. Covey, chief of the Bankruptcy Division, Administrative Office of the United States Courts, 266 cases were filed under the 1937 Federal Municipal Bankruptcy Act prior to June 30, 1946. Of this number, 204 cases have been concluded and 62 cases are pending. The aggregate amount of admitted debts in the cases concluded was $181,874,242 and the total amount paid or to be paid is $115,724,808.

FEDERAL INCOME AND PROFITS TAXES

By Mark Carter Mills
Associate Professor, Indiana University

GENERAL

The year 1946 was the first one since 1937 in which there was no Federal income or profits tax legislation. The immediate problems of the transition period were dealt with in the

Tax Adjustment Act of 1945 and in the Revenue Act of 1945. The first made available to corporations for the reconversion period the post-war tax refunds and credits provided by wartime revenue legislation. The far-reaching Revenue Act of 1945 which took effect on Jan. 1, 1946, repealed the excess profits tax and reduced both personal and corporation income taxes. Its other principal features were the repeal of the capital stock tax and of the automobile use tax. At the time of their passage in 1945 these measures were regarded as short-run means of facilitating reconversion and not as having provided solutions of the larger problems of long-range post-war tax revision.

It is noteworthy that there was less public discussion of tax revision in 1946 than in the immediately preceding years and that most of the proposed refinements of existing laws which gained attention during the year originated with the Treasury Department.

CURRENT TAX ISSUES

The objectives to be sought in a thoroughgoing post-war tax revision were set forth by Secretary of the Treasury Vinson in his 1945 Annual Report as follows:

"Broadly stated, our objective is a tax structure with which the taxpayer, the Government, and the national economy can live and prosper.

"The tax structure that taxpayers, both individual and corporate, can best live with will meet the test of fairness by relying on levies based on ability to pay. It will leave the individual adequate incentive to risk his funds in productive enterprise. It will be made up of taxes which are easy to understand and simple and convenient to pay.

"The tax structure that the government can best live with will produce the revenue needed to carry on the functions of government. It will distribute taxes in a manner designed to service the ends of national economic policy. It will be made up of taxes which can be administered fairly and economically.

"The tax structure which the economy can best live and prosper with will rely on those tax measures which strengthen the forces making for a high level of national income and that tend to offset the forces making for instability in our economy."

In spite of differences of opinion between individuals and between groups as to the details of tax revision, there was general agreement upon two points. First, that because of the wartime increase in the national debt and because of the much higher budget level to be expected for many years, tax rates would have to be much higher than in pre-war years. Second, that certain changes made in the tax system during the war years, such as the adoption of the withholding method of collecting taxes on wages and salaries, should be retained. Furthermore, there was general agreement that all tax legislation must be considered in the light of its relation to budget-balancing, its effect upon inflation or deflation and upon the productive efficiency of the nation.

CORPORATION TAXES

Corporation taxes have so much effect upon business that there was much discussion of them during the year both inside and outside of government circles. This was true in spite of the fact that there was much more prospect of a cut in individual income tax rates than there was of any important changes in the corporation taxes.

Although the legislation of 1945 relieved corporations, as such, of all taxes except the regular corporate income tax, the top rates of this tax in 1946 were exactly twice as high as they had been in 1939. The President's Budget Message of January 1946 estimated the yield of the corporation income tax in the fiscal year 1947 at $8,000,000,000.

The major criticism of corporation income taxes has long been that there is an element of "double taxation" when corporation income is taxed at the corporate level and the remaining income is taxed again in the hands of individuals. Whether there is real in-justice in such a procedure depends largely upon whether corporations do in fact shift their taxes.

The most extreme proposal to solve the problem of double taxation has been that of abolishing corporation income taxes altogether. Although it is extremely unlikely that such a solution will be sought in the near future, the loss of revenue to the Government would not be as great as might at first be supposed. Treasury officials have estimated that, at 1946 levels of income and tax rates, the net loss to the Treasury might not be more than $1,000,000,000 if corporation income taxes were abolished and corporate income taxed in the hands of stockholders under the individual income tax. Such a solution would, however, leave unsolved the difficult problem of taxing undistributed profits. It is also extremely unlikely that complete abolition of corporation taxes would be politically feasible.

A suggestion with respect to the taxing of undistributed earnings has been to tax corporations just as partnerships are taxed. The corporation, as such, would not be taxed on its earnings but the stockholders would be taxed on their proportionate shares of the undistributed profits of the corporation. The administrative difficulties involved in taxing the stockholders in large corporations in this manner would seem to be almost insuperable.

Another proposal suggested during 1946 is to adopt the principle of the English method and to administer the corporation tax as a withholding tax. By this method dividend income would be taxed in the hands of the corporation as salaries and wages are now taxed. As in the case of the present withholding tax the stockholder would be given a tax credit for the amount withheld and paid on his behalf by the corporation.

Between those who would drop corporate income taxation altogether and those who would make radical changes in the system are many people both in government and business who would prefer to see the present structure left unchanged with a lowering of rates when and if budgetary considerations made it possible.

FAMILY INCOMES

Aside from the proposals for lower rates and higher exemptions the aspect of the individual income tax most discussed during the year was probably that of the treatment of family incomes. This issue grows out of the fact that in the community-property states where family income may be apportioned between husband and wife there is a possible saving in taxes of as much as 20 per cent among middle-bracket income families which is not possible for citizens in other states.

The issues involved were well described by Stanley S. Surrey, Tax Legislative Counsel of the Treasury Department, in an address delivered before the American Institute of Accountants at Atlantic City Oct. 3, 1946.

"The present treatment of family income is vulnerable to indictment on at least two serious counts. It is a fertile breeding ground of costly, difficult, and wasteful litigation. It is sadly lacking in tax equity, since it involves both geographical discrimination between families in community property states and those in non-community property states, and qualitative discrimination between families receiving earned income and those possessing investment income. These discriminations dollarwise are highly inequitable at present tax rates. Judicial safeguards devised to protect the progressive surtax have not provided a rational system. The alternative legislative solutions to these difficulties are mandatory joint returns or per capita division between husband and wife. At the level of the family, the latter solution of per capita division appears politically feasible. Considered relative to the treatment of single persons, the adoption of the per capita system may perhaps involve some discrimination in favor of the family unit, but the extent of the discrimination so created is difficult of positive proof and measurement. At any event, it does not appear to be as serious as the present admitted inequalities among married couples. The double need of eliminating both these inequalities and the excessive litigation they promote would appear to outweigh the possible claims of single persons. This and other problems, such as the treatment of children and heads of families, together with the effect of per capita division on the revenue yield and the distribution of the income tax burden, will have to be studied before the possibilities of such nationwide income splitting as a solution to the family income problem can be finally determined."

EARNED INCOME

An important feature of the tax simplification program adopted in 1943 was the elimination of the earned income tax credit. At that time it was generally agreed that the provision as it had existed prior to 1943 was more productive of trouble than of revenue. All income up to $3,000 a year was presumed to be earned; all income over $14,000 was presumed to be unearned. In the range between these limits the maximum saving in taxes assignable to the earned income provision was $84 a year. In spite of the faults in the system the differential treatment associated with the earned income concept was defended on the ground of the necessity for special treatment of wage earners and small salary owners who did not have the opportunity to create estates to care for their declining years.

With the high rates of war and post-war periods a demand for special treatment of earned incomes has arisen in connection with executive salaries. It is argued that the high progressive rates in force since the beginning of the war have tended to impair executive efficiency. To a certain extent a high salaried executive is at a disadvantage in comparison with the recipient of an equal amount of property income who may be able to divide his income with his family. However, in view of past experience with the earned income provision and the general relief when it was abolished it seems rather unlikely that it will be revived in any form.

AVERAGING OF INDIVIDUAL INCOMES

Another refinement of the personal income tax suggested by certain Treasury officials during the year was that of applying to individuals the carry-forward privileges that corporations now have. This method of averaging income over a number of years would offer distinct advantages to individuals whose incomes varied widely from year to year and is already applied to a limited extent in the case of lawyers. Averaging would probably be administratively feasible in the case of high-bracket taxpayers but extremely difficult to administer if applied to all taxpayers. Another complication is that personal exemptions change from year to year.

TAX ISSUES IN THE CAMPAIGN

Taxation was not a major issue in the 1946 campaign. It was generally recognized that the possibility of a balanced budget and of lowered taxes depended upon the assumption of a cut in government expenditures and of the maintenance of high levels of business activity, employment, and national income. Some Republican leaders talked during the campaign of a flat 20 per cent cut in all individual income tax rates.

An alternative proposal which received some attention was that of raising personal exemptions. It was estimated by the Treasury that on the basis of existing income levels the decrease in revenue resulting from a 20 per cent cut in individual income tax rates, would be about $4,000,000,000 while each $100 increase in personal exemptions would cost the Treasury around $1,500,000,000 in revenue. Another effect of raising personal exemptions would be to drop an estimated 3,000,000 taxpayers from the rolls if the exemptions were raised from $500 to $600 while nearly 10,000,000 more would be dropped if the exemptions were raised from $600 to $700.

At the year's end it appeared that the most probable action to be taken by the new Congress would be a flat reduction of individual income tax rates, retroactive to Jan. 1, 1947, of perhaps 10 per cent.

IMPORTANCE OF INCOME AND PROFITS TAXES

Total budgetary receipts of the United States Government for the fiscal year 1946 amounted to $44,239,000,000 as compared with $47,740,000,000 in 1945, a decrease of $3,501,000,000. The major importance of income and profits taxes is shown by the fact that receipts from these sources amounted to $35,061,000,000 in 1945 and to $31,258,000,000 in 1946. With the dropping of the corporation excess profits tax in the Revenue Act of 1945 it is to be expected that corporation taxes will decline in relative fiscal importance. The growth in yield of income and profits taxes over a ten-year period is shown in the following table:

INCOME AND PROFITS TAXES 1937-1946

(in thousands of dollars)

Fiscal Year	Total Income and Profits Taxes	Individual	Corporation Income and Excess Profits	Miscellaneous Profits Taxes
1937	2,179,828	1,091,741	1,056,909	31,178
1938	2,629,030	1,286,312	1,299,932	42,786
1939	2,185,114	1,028,834	1,122,541	33,740
1940	2,129,609	982,017	1,120,582	27,010
1941	3,471,124	1,417,655	2,016,297	37,172
1942	8,006,884	3,262,800	4,687,462	56,621
1943	16,298,888	6,629,932	9,584,715	84,241
1944	33,027,802	18,261,005	14,629,344	137,452
1945	35,061,526	19,034,313	15,883,235	143,978
1946	31,258,138	18,704,536	12,462,437	91,165

LAND AND PROPERTY TAXES

By Carol Loucks

New York State Department of Audit and Control

GENERAL

Less than half the legislatures of the states met in regular or special session during 1946. Attention was again directed to state-local fiscal relationships. The Michigan legislature (Senate Concurrent Resolution 4) authorized the creation of a joint special legislative tax committee to inquire into all phases of state and local taxation. In Rhode Island the legislature provided for the creation of a commission which, in addition to reexamining the field of governmental operation, the cost of government services, and the tax structure of the state, is to consider the type and amount of taxes which should be imposed at the state level and distributed to the municipalities (H. B. 877, Laws 1946). The governor of Indiana appointed a tax-study commission whose 30 members are charged, among other matters, with examining the possibility of statewide reassessment of real estate and the place of the state in aiding local units.

The California legislature, meeting in special session this year, created the State School District Emergency Fund (Ch. 134, Laws 1946) which will be apportioned during 1946-1947 to those school districts whose levy is one half cent or less below the maximum established by the Education Code. Ohio (S. B. 362, Laws 1946) increased the allocation to the local government fund from $16,000,000 to $21,000,000.

THE MOORE PLAN OF NEW YORK

The New York State legislature, with the approval of the governor, enacted into law the recommendations of the Commission on Municipal Revenues and the Reduction of Real Estate Taxes. The old system of shared taxes, with revenue yields to localities dependent upon economic conditions and varying inversely according to need, was replaced by The Moore Plan. Under this plan, the state budget is divided into two parts, state purposes and local assistance, and reserve funds have been provided for each of these divisions. From the local assistance fund, payments are made to the localities upon a population basis: $6.75 per capita to cities; $3.55 to towns; and $3.00 to villages. Counties will continue to receive their share of motor vehicle and motor fuel tax revenues. Increases or decreases in revenues of each municipality are limited to ten per cent of the 1944 shared tax receipts each year until the normal per capita allocation is attained or the 1950 Federal census is available.

In accordance with another commission recommendation, the cost to the localities of home relief, aid to dependent children, old age assistance, and aid to the blind has been limited to 20 per cent. The state assumes the difference between the Federal aid received and the remaining 80 per cent.

It is expected that stability of revenues and minimizing the expense subject to greatest fluctuation will assist municipalities in preparing and executing sound financial programs. The tax statements or tax receipts of each municipality must show the amount of local assistance money to be received from the state for that tax year (Ch. 306, Laws 1946).

PAYMENTS IN LIEU OF TAXES

The financial conditions which prompted the formation of the tax study commissions of 1946 and previous years are related to another problem which received the attention of those concerned with property taxation—payment of taxes on property owned by government.

The report of the Committee on Payments in Lieu of Taxes of the National Association of Tax Administrators indicates the scope of this subject. This report recommends that government property, except that used for administration and possibly that used for penal, corrective, and defense purposes, be as subject to taxation as privately owned property. Only when such procedure is not feasible does the report recommend resort to payments in lieu of taxes.

A further recommendation by the committee that surplus property sold by the government for which title is retained pending receipt of the full purchase price should be subject to taxation by local authorities had been given status by the courts at the time the report was made. The Alabama Supreme Court (Ken Realty Co. *v.* State of Alabama) held that property and improvements purchased from the United States Government where legal title is retained by the United States until the full purchase price is paid, is taxable since the transaction gives the purchaser general and beneficial ownership. The United States Supreme Court (S.R.A. Inc. *v.* State of Minnesota) decided that a sale of realty to a taxpayer returned territorial jurisdiction to the state even though title to the property remained with the government until the full purchase price had been paid.

The Kentucky legislature amended the Kentucky Revised Statutes (S. B. 108, Laws 1946) to authorize payments in lieu of taxes by housing authorities. The Massachusetts legislature (Ch. 574, Acts of 1946) granted cities and towns in which housing authority projects are located the right to determine a sum to be paid annually in lieu of the taxation of said property, and, further, amended the General Laws (Ch. 410, Acts of 1946) so that payments in lieu of taxes could be collected by cities and towns from airports for that part of their property used for terminal facilities and administration buildings.

The question of the taxation of property owned by the Government or by government agencies was defined further by another decision of the United States Supreme Court (Reconstruction Finance Company *v.* County of Beaver, Pennsylvania). In this case the Court held that the extent to which real property was taxable under the Reconstruction Finance Corporation Act was governed by local law in each state since Congress had made no uniform provision in the law.

EXEMPTIONS

Veterans exemptions were again an important consideration in 1946. California (Ch. 120, Laws 1946) amended the Revenue and Taxation Code to include veterans of the Second World War in the exemption from property taxes and (Ch. 85 Laws 1946) provided that from Sept. 16, 1940 or, if subsequent to that date, from time of entry into the armed services until six months after honorable separation from service, property in which a veteran has at least 50 per cent ownership shall not be subject to fines, penalties, or costs. New Jersey extended its property tax exemption (Ch. 212, Laws 1946) to include veterans of the Second World War. The Michigan legislature during its special session revised its laws governing homestead exemption to veterans (Public Acts Oct. 24, 1946). In this connection the attorney general ruled that a serviceman is entitled to a refund of taxes paid after Dec. 31, 1939 providing the taxes for those years are paid after entering the service regardless of the time elapsed after the taxes became due and before entry into the service (Opinion, Attorney General to Auditor-General, March 27, 1946). For certain veterans and their wives, Massachusetts extended the property tax exemptions to $8,000 (Ch. 579, Acts 1946). New York state amended and added to its veterans exemption privileges so that real property purchased with the proceeds of pensions, bonuses, or insurance shall be exempt from taxes for the construction and maintenance of streets and highways (Ch. 86 Laws 1946); property purchased by popular subscription as appreciation of extraordinary service of a permanently injured war veteran was exempted from taxation up to the value of $5,000 (Ch. 139, Laws 1946); and the exemptions granted to a veteran were extended to include property held by his minor children (Ch. 556, Laws 1946).

The impact of these veterans exemptions is a matter of grave concern to tax authorities. Connecticut officials have estimated that the towns of the state will have to increase their rate from a fraction of a mill to approximately four mills to compensate for the loss in tax dollars due to veterans property tax exemptions. In California, Second World War veterans hold a potential $800,000,000 of exemption privileges.

The District of Columbia exempted from taxation property transferred to the American Red Cross (P. L. 433, Laws 1946). Mississippi granted all nonprofit, cooperative electric power associations exemption from *ad valorem* taxes (H. B. 563, Laws 1946) but the exemption does not include municipal *ad valorem* taxes on real estate owned by such corporations.

The South Carolina legislature submitted to the voters (S.J.R. 870) an amendment to the constitution empowering the General Assembly to exempt new manufacturing and industrial establishments in Chesterfield County from all local municipal, county, and special taxes for not more than ten years. South Carolina will also submit to the qualified electors an amendment to the constitution (H.J.R. 245 permitting the General Assembly to exempt household goods and furniture used in the home of the owner from taxation.

On the other side of the exemption picture, Mississippi (H. B. 487, Laws 1946) amended the Mississippi Code by deleting property belonging to the United States from the list of property exempt from *ad valorem* taxation. The Ohio Board of Tax Appeals (application of the City of Marion, O., No. 11568, June 4, 1946) ruled that a tract of land purchased by a city to be used and converted into an airport is not exempt from taxation when, as of tax listing day, only a certain portion of engineering work has been accomplished even when the purchase of such property was financed by a bond issue voted for the purpose of establishing an airport and the city retains exclusive ownership and control.

LEVIES

A direct annual tax on property, cigarettes, and pari-mutuel betting was enacted by the special session of the Illinois legislature to pay the interest and principal on bonds issued for the Service Recognition Bond, Interest and Retirement Fund (S. B. 1, Laws 1946). This tax was made subject to a vote of the people in November and, previous to the election, was declared constitutional by the Circuit Court of Appeals of Cook County (Routt *et al.* *v.* Barrett *et al.*). The legislatures of California (Ch. 110, Laws 1946), Kentucky (H. B. 491, Laws 1946), and Louisiana (Act 86, Laws 1946) authorized special levies on real property to construct and maintain war memorials.

Additional levies for educational purposes were enacted. Mississippi authorized (S. B. 200, Laws 1946) county boards of supervisors to levy a two-mill tax on all property outside separate school districts to build, equip, and repair schoolhouses, and (H. B. 310, Laws 1946) allowed counties to impose a tax of one-half mill for library purposes, which tax is outside any limitation on county levies. Wyoming increased the maximum levy for school districts maintaining high schools of certain standards or providing their pupils with means to attend such high schools (H. B. 5, Laws 1946). Kentucky (S. B. 61, Laws 1946) provided for an annual levy of not to exceed five mills to establish junior colleges in counties containing a city of the fourth class. The limitation on levies for the purposes of municipal universities was increased by the Ohio legislature (S. B. 306, Laws 1946).

Subject to the approval of the qualified voters within the area affected, the Mississippi legislature authorized municipalities with a population of less than 1,000 to levy an *ad valorem* tax of two mills for the maintenance and construction of streets. Wyoming permitted a two-mill tax for the construction and maintenance of improved all-weather roads (S. B. 8, Laws 1946) and excluded this tax from the prescribed maximum levies.

Machinery for financing particular local needs was provided during some legislative sessions. Mississippi voters may approve a two-mill *ad valorem* levy for cemetery upkeep and maintenance (H. B. 806, Laws 1946). In the same state, municipalities received authority to levy a tax not to exceed one-half mill for the construction and maintenance of parks, playgrounds, and other recreational facilities (H. B. 701, Laws 1946). In Louisiana, airport districts may be created if the electors approve, and these districts may be financed for a period of no more than ten years by a levy of not to exceed five mills each year (Act 364, Laws 1946).

The Louisiana legislation met more specific needs when it authorized the creation of the Lafayette Harbor and Terminal District to be financed by a levy of not more than two and one-half mills on property within the district (Act 14, Laws 1946); the Recreation and Park Commission of East Baton Rouge Parish with power to levy a one-mill tax (Act 246, Laws 1946); and the Jennings Navigation District which also has the power to levy a one-mill tax (Act 254, Laws 1946).

TAXATION OF THE RIGHT TO INSURANCE INCOME

Kentucky clarified its laws with respect to property taxation of the right to receive income from the proceeds of life insurance policies (H. B. 128, Laws 1946). The measure of the tax is now the assessed valuation of this right based upon an estimate of its worth in a voluntary sale instead of the former base of the expected proceeds based upon a mortality table. The rate of the tax is limited to five cents per $100 of valuation.

CORPORATION AND BANK TAXES

By Chester B. Pond
New York State Department of Taxation and Finance

FEDERAL TAXATION

After the passage of the Revenue Act of 1945 in December of that year no legislation affecting the taxation of corporations was enacted during the session of Congress in 1946. Activity in the Federal area was limited to decisions of the courts and rulings by the Commissioner of Internal Revenue. It might be noted that these findings were very largely of a special case nature rather than matters of wide applicability.

Through the Department of State several tax treaties were negotiated, the most notable being with the United Kingdom and France. These conventions dealt largely with the avoidance of double corporate taxation on certain operations and the application of the tax on other operations at a reduced rate. Immunity from taxation was also granted the numerous international organizations which have been established in conjunction with the United Nations and through the efforts of the Department of State.

STATE CORPORATION TAXES

General.—State activity in the corporate tax field was also relatively light in 1946, with only a small number of state legislatures in session, but the first signs of post-war revenue hunting became apparent. Several of the states adjusted their administrative machinery, revised existing statutes, or completely rewrote their corporate tax laws.

Municipalities.—Perhaps most significant of the year's developments was the further extension of jurisdiction in the income tax field to municipalities. St. Louis and Toledo were the newcomers, the former levying a ¼ of 1 per cent net profits tax on resident and nonresident corporations, and the latter, a 1 per cent net profits tax on resident corporations to the extent that such income is derived from local activities. New York City was granted a continuation of its tax on gross receipts or operating revenue of utilities. Los Angeles enacted a gross receipts tax upon the manufacture and sale of goods at wholesale.

New York.—A number of changes was made in the tax laws affecting corporations. Outstanding was the return from the emergency rate of 6 per cent to the normal 4½ per cent in the franchise tax on domestic and foreign corporations, the reduction being applicable to any business year ending after June 30, 1945. According to another 1946 statute, foreign corporations, whose sole activity within the state consists of retaining securities there for safekeeping, are not considered to be doing business within the state. Several other measures relative to the franchise tax made minor changes in the computation of the tax. Deductions from investment capital of any short term liabilities applying to it are permitted, as are deductions from business capital of capital liabilities not already deducted from investment capital. Corporations which had previously filed consolidated reports must now file combined reports, and the tax payable is computed on the combined entire net income or capital of all corporations listed in the report. Thus, intercorporate items for tax computation purposes are eliminated. The state temporary 2 per cent tax on utilities is continued to March 31, 1947, and the right of cities to levy a 1 per cent utilities tax is extended to June 30, 1947.

Massachusetts.—Further bonuses for veterans are to be financed by an additional 1½ per cent tax on the net income of domestic and foreign manufacturing and business corporations (except corporations dealing in securities as principals) for the years 1947 to 1950. This act replaces the 2½ per cent tax applicable to 1946 but is in addition to the 10 per cent and 3 per cent surtaxes. The state has also instituted a 5 per cent tax on the underwriting profits of marine, and fire and marine insurance companies, in place of the gross premiums tax applicable to other forms of insurance companies.

Missouri.—The extensive alterations in the corporation tax laws made in 1946 are largely with respect to administration. The franchise tax due date has been advanced from May 15 to Dec. 31. All collection functions in conjunction with the organization and franchise taxes were centralized in the office of the Director of Revenue. The major part of the law relating to the taxation of insurance companies were rewritten without significant change other than transferring the collection activities to the Director of Revenue. A new enactment provides that the tax on domestic, life and accident, mutual other than life, and title insurance companies is in lieu of the tax on intangibles. The present utilities tax was re-enacted without material change.

Mississippi.—The premium tax on domestic and foreign insurance companies was equalized by providing that domestic companies pay the entire difference (rather than one-half as heretofore) between their *ad valorem* tax and the tax on foreign companies doing the same business.

Louisiana.—The franchise tax was amended to a considerable extent, chiefly by lowering the rate from $2 to $1.50 per $1,000; elimination of distinction between domestic and foreign corporations; inclusion in the tax base of all borrowed capital and certain reserves; exclusion of certain amounts for taxes, interest, advance business payments, and surpluses set aside by court order; redefinition of borrowed capital so as to include only indebtedness maturing at least one year after incurrence; introduction of a net sales formula, and a plan for allocating subsidiary income. For the state income tax, corporations are now allowed a deduction for contributions up to a maximum of 5 per cent of net income. Domestic corporations are granted a credit for income taxes paid to another state on income taxable by Louisiana. Another 1946 statute provides that dividends distributed shall be considered as taken from the latest accumulated earnings of a corporation rather than the earliest earnings as in the past. In the taxation of insurance companies' premiums the stock of homestead building and loan associations organized under Louisiana laws and insured by a Federal or state agency may now be included among investments deductible in the computation of the tax.

Kentucky.—The organization and qualification fee schedule for domestic and foreign corporations was revised upward with a classified and graduated scale of rates replacing the former flat rate. Recording and filing fees were similarly revised.

BANK TAXATION

Louisiana.—The existing tax on bank shares was repealed and a new measure was enacted which is substantially the same as the old except that bank shares are now classified, and state and national bank shares are taxed at 50 per cent of assessed valuation. Other provisions deal with the date of filing lists of shareholders and all real estate owned by banks or their subsidiaries.

Missouri.—A 7 per cent net income tax upon banking institutions was enacted in lieu of the bank share and combined property taxes formerly levied. In line with the general centralization of functions the tax will be administered by the Department of Revenue.

New Jersey.—Financial businesses

employing moneyed capital for profit and in competition with national banks became the subject of a new tax replacing the state franchise tax or other state or local taxes based on personal property. Such corporate taxpayers are liable for the year 1946 under this tax or the corporation business tax, whichever is greater. Any tax paid under the latter act may be credited against taxes due under this act. Hereafter, penalties on taxes levied for county purposes shall be applicable to the bank share tax, which is now payable semi-annually.

New York.—Banks are granted a deduction in computing net income to the extent of contributions made toward employees' pension trusts if the amount has not previously been allowed or is apportioned over 10 years or covers not more than one-tenth of the total pension liability with respect to services prior to such taxable year.

Virginia.—Any city regardless of population and any town in which the branch of a city bank is located may now impose a tax on bank stock not exceeding 40 per cent of the state tax rate.

JUDICIAL REVIEW

Litigation in the field in 1946 dealt largely with the determination and apportionment of net income. In February, the Oklahoma Supreme Court in *Oklahoma—Texas Trust* v. *Oklahoma Tax Commission* held that a business trust was taxable as a corporation. Disallowance of credit for accrued expenses was held valid by the Tennessee Supreme Court in *Southern Coal Company, Inc.* v. *McCanless.* The Vermont Supreme Court ruled that Federal excess profits taxes were deductible in computing the Vermont franchise tax in the period before excess profits income became a credit in 1942, and that a refund may be issued by Vermont in cases where Federal renegotiation has reduced taxable income (*Fairbanks Morse and Company* v. *Harvey*).

In July, the Minnesota Board of Tax Appeals decided that the packaging of butter may not be deemed manufacturing within the meaning of the income and franchise tax law (*Sugar Creek Creamery Co.* v. *The Commissioner of Taxation*). The taxation of insurance companies came up for review on several occasions during the year and in the two most important cases, *Prudential Insurance Co.* v. *Benjamin* and *Robertson* v. *California,* the U. S. Supreme Court sustained the right of states to tax this source and in so doing to distinguish between domestic and foreign companies.

The U. S. Supreme Court in June rendered a *per curiam* decision affirming the California Supreme Court ruling in *West Publishing Company* v. *McColgan.* It was clearly established that a state may tax a foreign corporation engaged exclusively in interstate commerce on that portion of its net income derived from sources within the state, despite the fact that the corporation has no regular place of business in the usual sense. Essentially the same type of law in Minnesota was validated in September by the Minnesota Board of Tax Appeals in *Owens-Illinois Glass Company* v. *The Commissioner of Taxation.*

ESTATE AND INHERITANCE TAXES

By Mortimer M. Kassell

Deputy Commissioner and Counsel, New York State Tax Commission

DEATH TAX CONVENTIONS

The growing tendency to provide for the elimination of multiple death taxes by international agreement was reflected by the signing of a Tax Convention by the United States and France at Paris on Oct. 18, 1946, which will take effect upon exchange of ratifications. The United States-United Kingdom Death Tax Convention, signed April 16, 1945, became operative on exchange of instruments of ratification at Washington, D. C. on July 25, 1946. Negotiations for similar conventions with the Philippines, Denmark, the Netherlands, and the Union of South Africa, are pending.

STATE TAXATION

Because most state legislatures were not in session, there were few important amendments made to state death tax laws. The Congress exempted from the District of Columbia inheritance tax transfers made to the American National Red Cross (Public Law 430, 79th Cong., 2d Sess.). Massachusetts provided for the payment of death taxes upon the settlement of the estates of absentees (Ch. 395). New Jersey provided that interest shall not be chargeable, with respect to the inheritance tax in the estate of a deceased member of the armed forces, until one year after official notification of death (Ch. 70), and limited the lien for inheritance taxes to two years after July 1, 1946 or ten years after the date of death, whichever is later (Ch. 240). New York provided for the inclusion in the gross estate of property with respect to which the decedent possessed a power of appointment at his death, or with respect to which he had exercised or released a power in contemplation of, or to take effect at, death, effective May 1, 1947 (Ch. 858), that exemptions are allowable only with respect to transfers which are indefeasibly vested (Ch. 380), for the collection of interest on unpaid additional estate taxes from the date of the final Federal estate tax determination (Ch. 694), and for a limitation of time to collect transfer taxes (Ch. 558). South Carolina provided for the reciprocal exemption of charitable transfers to residents, and entities organized under the laws, of other states (Act 547). Virginia provided for the apportionment of Federal and state estate taxes in the absence of a contrary provision in the decedent's will (Ch. 128), and for the apportionment of non-residents' exemptions (Ch. 215).

FEDERAL TAXATION

In the field of Federal estate taxation, the time for tax-free releases of powers of appointment was extended to July 1, 1947 (House Joint Resolution 353).

A group of decisions by several United States Circuit Courts of Appeal, and amendments made by the United States Treasury Department to Section 81.17 of Regulations 105 (T.D. 5512, 1946-1 CB 264), interpreted the holdings of the United States Supreme Court in *Helvering v. Hallock* (309 U.S. 106), *Fidelity-Philadelphia Trust Co. v. Rothensies* (324 U.S. 108), *Commissioner of Internal Revenue v. Estate of Field* (324 U.S. 113), and *Goldstone v. United States* (325 U.S. 687), relating to the taxation of transfers with the retention of a possibility of reverter. The amendments to Regulations 105 provided that a transfer of an interest in property by a decedent during his life is taxable if possession or enjoyment of the transferred interest can be obtained only by beneficiaries who must survive the decedent, and the decedent or his estate possesses any right or interest in the property, whether arising by the express terms of the instrument of transfer or otherwise. In the Circuit Court cases, it was held that the remoteness of the possibility of reverter, or the fact that the possibility arises by operation of law, does not affect the taxability of the transfer. (*Commissioner of Internal Revenue v. Bank of California* (CCA-9), 155 F. 2d 1, cert. den. October 14, 1946; *Commissioner of Internal Revenue v. Bayne's Estate* (CCA-2), 155 F. 2d 475; *Thomas v. Graham* (CCA-5), December 12, 1946; *Commissioner of Internal Revenue v. Spiegel's Estate* (CCA-7), December 28, 1946.)

In *Commissioner v. Estate of Holmes* (326 U.S. 480), the Supreme Court held that a transfer in trust made by a decedent on January 20, 1935, reserving a power to terminate the trust, is a transfer with the reservation of a power to alter, amend or revoke, within the meaning of section 811(d)(2) of the Internal Revenue Code.

In *Allen v. Trust Company* (326 U.S. 630), the Supreme Court reaffirmed the principle that a transfer is made in contemplation of death if the thought of death is the "impelling cause of the transfer," but held that, on the facts before it, the release by decedent, within two years of his death in 1938, of a power to amend transfers in trust made by him in 1925, was not a transfer in contemplation of death for Federal estate tax purposes.

AUTOMOBILE TAXES

By Mildred F. Guffin

New York State Department of Taxation and Finance

LEGISLATION AND COLLECTIONS

The shadow of the war still lies over automobile tax legislation and collections, though it has begun to recede. The Federal automobile use tax lapsed on July 1, 1946, and was not renewed. Special Federal war emergency excise taxes on gasoline, lubricating oil, and pipe lines remain in effect. Receipts from them during the first six months of 1946 dropped to $269,000,000, a loss of 15 per cent from $318,000,000 in 1945.

State revenues from gasoline taxes began to rise in 1945 and are continuing. Total motor fuel tax collections in 1945 were almost $850,000.000, an increase of nearly 14 per cent over 1944, and collections for the first eight months of 1946 were over $725,000,000, an increase of 39 per cent over the $522,000,000 collected in the same period in 1945. The end of gasoline and tire rationing is chiefly responsible for this trend, though higher tax rates have a small part.

On the basis of government data, certain oil interests forecast an increasing average annual gasoline consumption, at a rate of 680 gallons of gasoline per passenger car for 1946, 685 gallons for 1947, and over 730 gallons in 1950. Motor vehicle licenses brought in state tax receipts of $456,000,000 during the fiscal year ended June 30, 1946, as contrasted with $414,000,000 in fiscal 1945. Over 1,000,000 more cars were registered in the first half of 1946 than in the corresponding period of 1945.

MOTOR FUEL TAXES

Less than half of the state legislatures held sessions in 1946, and motor fuel tax legislation was not extensive. Virginia and Mississippi were the only states to raise their basic rates. Mississippi kept the existing rate of six cents per gallon on gasoline but increased the rate on motor fuel other than gasoline from six to seven cents per gallon. Virginia raised the gasoline and use-fuel tax rates from five to six cents per gallon. South Carolina re-enacted its motor fuel tax without change, and New York extended its emergency taxes to March 3, 1947.

Six southern states have permitted increases in refunds. Virginia added a month to the period allowed for filing claims. Kentucky and Georgia authorized refunds of a major part of the taxes collected on gasoline used in farm equipment. Mississippi will refund five cents of the six-cent gasoline tax paid for fuel used in municipally owned equipment. South Carolina added gasoline used in training aviation students from allied nations to its list of fuel subject to refunds, retroactive to July 1, 1941.

Mississippi reorganized its administration, created the office of Motor Vehicle Comptroller, and gave to the new office the administration of motor fuel and use-fuel taxes, and the power of making reciprocal agreements with other states. A new Louisiana law confines use by New Orleans of the special fund from the parish-aid gasoline tax to streets and bridges. In the November elections, Louisiana voters adopted two constitutional amendments, one taxing all gasoline sold to the Federal Government except that delivered in lots of 6,000 gallons or more, or to the armed forces, the second exempting tractor fuel from taxation. In North Dakota the voters approved an initiative petition providing for the refund of the tax on motor fuel used for agricultural or industrial purposes.

MOTOR VEHICLE LICENSES

There was more legislation in 1946 concerning motor vehicles than motor fuel. Georgia instituted new schedules of taxes on truck trailers and semi-trailers, which are much lower for lighter vehicles. In connection with the taxation of trailers in Florida, a 1946 ruling of the Attorney General states that trailers may be classified for taxation either as motor vehicles, as personal property, or as real estate, depending on their use. Only those attached to utility lines and set up on foundations may be taxed as real estate.

Mississippi has completely revised registration and privilege license fees for motor vehicle operators, lowering nearly all fees. Operators of motor vehicles using fuels other than gasoline on which no tax has been paid must pay annual license fees of $50 or $100, based on the gross weight of the vehicles. Fees for passenger carriers are based on a percentage of the gross revenues, instead of seating capacity. Mileage taxes, previously graduated according to the carrying capacity of the vehicles, now correspond to a mileage rate depending on the classification of the vehicles. Inspection fees for all kinds of carriers have been slightly lowered. A new law authorizes reciprocal agreements with other states to relieve truck operators. The first agreement under this law was made with Tennessee in April. Neither state will tax trucks licensed in the other state.

On Jan. 1, 1947, Kentucky had three new truck taxes, graduated by gross weight, instead of the one former tax, based on capacity. All trucks will pay one basic tax; property carriers will pay a second; and non-property carriers a third. Trucks not equipped with pneumatic tires continue to pay an additional 50 per cent of their other fees.

The Louisiana law has been extensively revised. Length limits were established for buses, and length limits for trucks, tractors, and semi-trailers were increased from 45 to 50 feet. Weight limits were set for trucks and trailers. A more stringent penalty for operating vehicles in excess of the registered weight was enacted.

New Jersey generally increased its fees. Certificates of ownership now required cost more than the former certificates of title, and the automobile dealers' license fee is now much higher. Registration fees for heavier commercial vehicles, trailers, and tractors will run much higher, effective April 1, 1947. The increased truck fees, advocated by Governor Edge in his annual message, aroused great opposition, which was effective in lowering the rates of the original bill, and postponing its effective date far into 1947.

Common carriers in Rhode Island, too, must pay more for their certificates or permits and license plates. Virginia, reversing the trend toward increases, has reduced its minimum motor vehicle registration fee, and the fees for dealers' registration, for additional license plates, for registration of private motor vehicles used to transport non-paying passengers, and contract school buses. As of April 15, 1947, the gross receipts tax was discontinued on common and contract carriers. New fees based on gross weight will take its place. Carriers operating fewer than three vehicles with not more than $5,000 gross receipts are exempt from the new law.

The General Assembly of South Carolina passed an interesting provision requiring the State Highway Department to refuse licenses for motor vehicles on which state or local taxes had not been paid. Automobile dealers secured a temporary, and then a permanent, injunction, restraining the Highway Department from refusing licenses. Latest word from South Carolina was that the Highway Department was obeying the injunction, but had served a notice of appeal to the Supreme Court.

OPERATOR'S LICENSES

Effective July 31, 1946, Louisiana began to require licenses for operators and chauffeurs. The biennial fee for operators is $1.00 everywhere except in cities of more than 300,000 population, where it is $2.00. The corresponding fees for chauffeurs are $3.00 and $5.00. All persons except farmers and drivers of government vehicles are required to obtain licenses, within 11 months of the effective date of the law, and provision is made for testing applicants. Nonresidents may operate within the state for 60 days without a license. A basis for reciprocal regulation of licenses with other states has been established.

The Indiana Bureau of Motor Vehicles, on Jan. 1, 1946, began licensing operators for two-year periods. The new expiration date will always be the last day of February in even numbered years.

Mississippi now requires all drivers of commercial vehicles to pay the chauffeur's license fee, in addition to the operator's license fee, which was doubled in 1946.

In Virginia all new or renewal operator's licenses issued after July 1, 1946 will expire three years from the birthday month of the applicant nearest to the month in which the application for license is made. Licenses will be valid for three years and must thereafter be renewed in the applicant's birthday month. Provisions regarding chauffeur's licenses have not been changed.

FINANCIAL RESPONSIBILITY

Two more states have been added to the list of those which require motorists to prove financial responsibility in case of accident. By provisions of the Kentucky law, effective Jan. 1, 1947, the operator of every motor vehicle involved in an accident in which any person is killed or injured, or property damage of over $50 occurs, must render a report. Operators must prove financial responsibility either by carrying liability insurance or by posting bond. Drivers who do not satisfy these requirements may have their licenses suspended or revoked. The law applies to non-residents as well as residents.

The effective date of the new Missouri law was 90 days after July 8, 1946. The law is similar to the Kentucky law, providing for suspension or revocation of the driver's license and the car registration upon conviction of an offense. Non-residents are subject to its provisions.

PERIODICAL PUBLICATIONS

American Economic Review
Northwestern Univ., Evanston, Ill.
Annals, The
American Academy of Political and Social Science, 3457 Walnut Street, Philadelphia.
Business Week
330 West 42nd Street, New York City.
Commercial and Financial Chronicle
25 Park Place, New York City.
Journal of Political Economy
5750 Ellis Ave., Chicago.
Nation's Business
Chamber of Commerce of the United States, 1615 H St., N.W., Washington, D. C.
Tax Administrators News
1313 E. 60th St., Chicago, Ill.
Tax Digest
15 East 26th Street, New York City.
Tax Magazine
350 Fifth Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut Street, Philadelphia.

AMERICAN TAXPAYERS' LEAGUE, Munsey Bldg., Washington, D. C.

FEDERATION OF TAX ADMINISTRATORS, 1313 E. 60th St., Chicago, Ill.

INSTITUTE OF LOCAL AND STATE GOVERNMENT, University of Pennsylvania, Philadelphia.

NATIONAL ASSN. OF ASSESSING OFFICERS, 1313 E. 60th St., Chicago, Ill.

NATIONAL HIGHWAYS ASSN., Bass River, Cape Cod, Mass.

NEW ENGLAND STATE TAX OFFICIALS ASSOCIATION, Room 236, State House, Boston, Mass.

RESEARCH INSTITUTE OF AMERICA, INC., THE, 292 Madison Ave., New York City.

TAX INSTITUTE, 150 Nassau St., New York City.

DIVISION VIII

PUBLIC RESOURCES AND UTILITIES

FEDERAL SURVEYS AND MAPS

By C. F. Fuechsel

Chief, Map Information Office, U. S. Geological Survey

GENERAL

During 1946 the Federal surveying and mapping agencies completed their readjustment to peacetime objectives and clarified their respective programs for the immediate future. Practically all agencies with substantial survey and map-making capacities had, since 1941, devoted the greater part of their organizations to projects required by the War and Navy Departments, and not all of such assignments were brought to a close with the termination of the war. The global aspects and air power of the Second World War brought a realization that the world-at-large was less than 25 per cent mapped, even in sufficient detail for the meager requirements of aeronautical pilotage charts. This situation was very considerably improved during the war but much work remains to be accomplished during the next decade, particularly in view of the potential speed and power of any military operations which might arise in the future. Projects carried by civilian agencies for the military have, therefore, not all been terminated, and the few which have been continued now assume more or less long-term aspects. This, in turn, has enabled the agencies concerned to adjust their organizations to cover substantially their normal responsibilities as well.

Great advances in mapping techniques, instruments, and procedures were realized during 1946. Many of the forward steps brought by the exigencies of war, such as the development of the trimetrogon process of mapping and electronic devices for air navigation, were brought to still more advanced stages during 1946. The terrain clearance indicator and the various elements of Shoran equipment now show great promise of practicable application to geodetic, hydrographic, and reconnaissance topographic surveys in the reasonably near future. Electronics are already extensively employed in geophysical explorations.

For the first time in our history the nation has become actively map conscious. Broad development programs, such as those contemplated for the Missouri, Columbia, and other river basins covering the entire West, and myriad planning and engineering projects involving the rest of the country, have combined with the map-consciousness engendered by a global war to effect a general demand that the basic map status of the United States be immediately improved. In recognition of these urgent requirements the Geological Survey has presented a national mapping program to the Congress for completion of the topographic map of the country during the next 20 years. At the rate of previous accomplishments this task would not be completed for more than a century.

Barely half the continental United States is topographically mapped in some manner and only a quarter of the country is covered by maps of sufficient detail to meet present-day requirements. Most of the other leading nations have complete series of topographic maps which are maintained in up-to-date status.

SURVEYING AND MAPPING AGENCIES

The surveying and map compilation projects of the Federal Government cover a very broad scope of endeavor and include geodetic, geologic, hydrographic, topographic, cadastral, soil, and many other types of surveys as well as map compilation involving innumerable subjects and purposes.

The activities of the several Federal surveying and mapping agencies are coordinated by the Bureau of the Budget, thus eliminating duplication of effort and promoting over-all efficiency of operations. Functions of the former Federal Board of Surveys and Maps were transferred to the Bureau in 1942 for this purpose. Cost accounting and reporting procedures have since been established whereby the over-all mapping requirements of the various Federal agencies may be determined and operations scheduled on a priority-of-needs basis, and relative costs and efficiencies of the several producing organizations may be compared. The Bureau also encourages the study of new methods and instruments and adoption of the most efficient and economical procedures of surveying and mapping currently available.

The accomplishments of the various producing agencies, as well as those mainly concerned with map research and the maintenance of important map libraries, are presented in the following statements. They have been arranged in alphabetical order, on an agency basis, rather than by departmental groupings. If not an independent bureau, the department affiliation is indicated after the agency name with capital letter in parentheses, thus: (A)-Agriculture; (I)-Interior; etc.

THE AMERICAN YEAR BOOK REPORTING AGENCIES

Aeronautical Chart Service (W)
Army Map Service (C. of E., W.)
Board on Geographical Names (I)
Bureau of Reclamation (I)
Bureau of Land Management (I)
Coast and Geodetic Survey (C)
Corps of Engineers (W)
Federal Communications Commission
Federal Power Commission
Field Service Branch (former AAA)
Forest Service (A)
Geological Survey (I)
Hydrographic Office (N)
International Boundary Commissions
  (United States, Alaska, and Canada)
  (United States and Mexico)
Lake Survey Offices (W)
Library of Congress
Map Information Office (Geological Survey) (I)
Map Intelligence and Cartography, Division of (S)
Mississippi River Commission (W)
Office of Indian Affairs (I)
Public Roads Administration (FWA)
Soil Conservation Service (A)
Soil Survey (Bureau of Plant Industry) (A)
Tennessee Valley Authority

AERONAUTICAL CHART SERVICE (W)

The Aeronautical Chart Service of the Army Air Forces is responsible for the production, procurement, and distribution of all maps, charts, and related publications required by the Army Air Forces. These charts are made available to civil aviation and others requiring small-scale data.

During the first post-war year the Service has been engaged primarily in converting from war to peacetime operations. Of about 7,000 charts produced during the war, approximately 3,600 charts of all types will be maintained in peacetime. To accomplish this a schedule has been set up whereby all aeronautical charts will receive a periodic inspection and each will then be brought up-to-date, using the latest data available for the particular area. As a peacetime practice, greater use will be made of aerial photography as source material from which to compile and revise aeronautical charts. In addition to the 12,500,000 square miles of aerial photography accomplished during the war, 296,700 square miles of aerial photography has been accomplished during 1946.

New developments in cartographic techniques and efforts in standardizing charting work have resulted in: A. A series of aeronautical charts being produced depicting terrain by shaded relief in various tones of gray which closely approximates the view seen on a radar scope. B. Air Coordinating Committee adoption of standard aeronautical symbols for use by all charting agencies. C. A new type of specification produced that includes a full-colored example of each charting characteristic described. D. ACC standardization of Instrument Approach and Landing Charts. The Aeronautical Chart Service has adopted a twenty-one (21) post loose leaf binder for Pilot's Handbooks which are made up to include Instrument Approach and Landing Charts of a given area.

The Aeronautical Chart Service is continuing chart development and experimental work constantly to improve the standards and procedures pertaining to the compilation and production of aeronautical charts.

ARMY MAP SERVICE (C. OF E.) (W)

The Army Map Service, through the Corps of Engineers, is responsible for providing maps needed by the War Department. During periods of hostilities this responsibility is divided between the Map Service and the several theater commanders working under a coordinated program, and includes the preparation of maps, especially of foreign areas, map reproduction, the maintenance of a complete map library, and investigation of new and improved cartographic and reproduction techniques. In domestic areas where suitable maps do not exist, the function of providing them is also a part of the responsibility.

During the past year 2,915 new and revised maps were prepared, over 64,000,000 copies were printed from 6,916 basic maps, and preparation had been started on about another 5,000 basic maps. The library acquired about 196,000 new maps and over 5,000 books and documents in addition to thousands of items which have not as yet been classified. It now has a total holding of over 800,000 maps, books, and documents.

The post-war activities of the Army Map Service are an expansion of the library facilities to include topographic maps, geodetic data, and related mapping intelligence which could serve as compilation source material for War Department maps, the preparation of a series of strategic and planning maps of many foreign and some domestic areas at scales of 1:250,000 and 1:1,000,000, and the mapping of military posts, camps, and stations at large scales. As an addenda to regular mapping a Relief Map Section prepares relief models and investigates suitability of plastic, rubber, or other similar materials for this purpose.

Through a depository program recently inaugurated, copies of the Map Service library holdings may be found in many local and university libraries in this country.

BOARD ON GEOGRAPHICAL NAMES (I)

The Board on Geographical Names rendered a total of 2,500 name decisions, including 35 on domestic names. A transliteration system for treatment of Arabic and Persian names, and a transcription system for the treatment of Mongolian names, were devised and approved. The foreign name files of the Board were increased by the processing of large numbers of names for government maps and reports, and the receipt of processed names from government mapping agencies. Over 3,000 mail and telephone requests for place-name information were answered, and over 15,000 copies of technical bulletins and decision lists were distributed to the various users of the Board's findings. Directions for the treatment of geographical names were published for 10 areas in Latin America, and preliminary examination was completed for 20 other areas. Steps were taken to facilitate active cooperation between the Board and its counterparts in foreign countries.

BUREAU OF LAND MANAGEMENT (I)

The Bureau of Land Management (formerly General Land Office) executes cadastral surveys within the area of the public domain and publishes state maps of the several public land states as well as the official wall map of the United States.

During the year, cadastral engineering activities were carried on in 22 states and the Territory of Alaska. This work involved the survey and resurvey of 1,125,557 acres, in addition to cadastral field investigations and miscellaneous projects not measurable on a quantity basis. These surveys are represented on a total of 252 cadastral plats which were prepared in final form for the permanent record.

During the year, work was initiated on an extensive program of cadastral surveys and resurveys in the Missouri River Basin within Montana, Wyoming, and the Dakotas in connection with the development of that area. The project contemplates the resurvey of approximately 450 townships within the Missouri River Basin and the recovery and monumentation of public survey corners in numerous townships along the Little Missouri, Powder, Cheyenne, and Moreau rivers. In addition to defining land boundaries, these surveys afford control for extension of topographic mapping within the Missouri River Basin.

Cadastral survey and resurveys were also executed on other large areas in the western public land states for administration and management of the public domain.

During the year, the map of the State of California was completed and work was commenced on the revision of the map of the State of Wyoming. A reprint of the official wall map of the United States with certain revisions is in progress.

BUREAU OF RECLAMATION (I)

The Bureau of Reclamation is not a primary map-making agency and undertakes to contract for such work or to perform such operations only when existing maps of suitable quality are not available, and primary map-making agencies can not undertake to prepare suitable maps by the time needed, or when the mapping is a specialized type peculiar to Bureau needs.

The Bureau, in carrying out its responsibilities for development of the water resources of the West, uses numerous topographic maps of the Geological Survey and in cooperation with the Survey finances the preparation of such maps in areas when immediate needs require higher priority work than the normal demands on the Geological Survey would permit. In addition, the Bureau, using specifications approved by the Survey, lets contracts for maps in areas urgently needed for carrying out irrigation projects. During 1946 contracts were advertised or let by the Bureau for photography, photo mosaics, and topographic maps at various scales from 1:2,400 to 1:24,000 in areas totaling more than 27,000 square miles in California, Utah, Montana, Wyoming, and South Dakota.

COAST AND GEODETIC SURVEY (C)

In 1946 this agency published 11 new nautical charts and 12 new editions, 309 new prints, and 37 reprints of existing nautical charts. The total number of catalogued nautical charts, which are under constant revision and of which revised editions are frequently published, is 879, of which 165 are of Philippine waters. Of special significance was the production during the year of a group of charts adapted to radar navigation. An important cartographic undertaking during the year was the beginning of a series of 35 large-scale charts covering the Gulf Intracoastal Waterway from St. Marks, Fla., to Brownsville, Tex., a distance of 1,126 miles.

Hydrographic surveys covering 11,820 square miles were made, including 30,559 miles of sounding lines, mostly along the East Coast and in Alaska. Topographic surveys for graphic control were made of 317 square miles. including 452 miles of shoreline, almost all in Alaska.

In general, control surveys during the year were concerned with large-scale flood-control and reclamation projects such as in the Columbia River Basin and the Missouri and Trinity River valleys. Surveys were made as follows: First-order triangulation, 2,317 linear miles, covering 49,025 square miles of area; second-order triangulation, 237 linear miles, covering 1,720 square miles; first-order levels, 1,242 miles; second-order levels, 6,070 miles; 14 first-order bases measured, totaling 82 miles; and 12 astronomic stations occupied. Reconnaissance for future triangulation extended along 4,239 miles of arc, covering 73,620 square miles of area. The elevations of 9,450 bench marks were determined, and 2,518 triangulation stations were located. A triangulation connection between Florida and three islands of the Bahama group was effected in a cooperative project with the Corps of Engineers and the Hydrographic Office, utilizing flares released from airplanes.

The standard aeronautical charts of the United States and possessions, 579 in number, were maintained as to aeronautical chart data. This includes 329 instrument approach and landing charts, now being maintained by the Bureau, of a series of about 525 being produced in cooperation with the Army Air Forces. The 37 Flight Charts of the United States were completed. An important accomplishment was the production of the Map of the Northern Hemisphere, North of 39° 30′, showing topography. This map is in two sections on a sterographic projection at the scale of 1:6,336,000 along the parallel of 65°.

Air photographs of 10,200 square miles, covering scattered areas along the Atlantic and Gulf Coasts and the Alaska Peninsula, were taken in collaboration with the Coast Guard. These photographs were used for nautical chart corrections, and for the compilation of 48 planimetric maps and 26 topographic maps. A total of 840 planimetric maps have been published to date, with 352 planimetric and topographic maps awaiting publication. A total of 79 airports were photographed, and 93 airports were surveyed for all purposes during the year.

CORPS OF ENGINEERS (W)

The Corps of Engineers is responsible for all maps and surveys required by the War Department exclusive of the Army Air Forces. In this capacity the Corps directs the activities of many large organizations such as the Army Map Service, Mississippi River Commission, U. S. Lake Survey (all reported separately), and the District Engineer Offices which perform considerable survey work incidental to river development and other activities. Maps for military forces are normally produced in the United States by the Army Map Service, and overseas by topographic personnel of the Corps. During the year, efforts of all Corps of Engineers mapping facilities were concentrated upon the preparation of maps throughout the world that are of potential military interest to the War Department. Map compilations of domestic areas were limited to small-scale strategic maps required by the War Department and to relatively few large-scale surveys of military training areas which had not been scheduled for mapping by Federal civilian agencies.

FEDERAL COMMUNICATIONS COMMISSION

This agency prepares maps primarily for use in connection with hearings and long-range service studies. They are usually of a technical nature and not of particular interest to other than the radio profession. They are generally prepared in small quantities for use as exhibits to aid in frequency allocation problems. All maps presented at hearings as exhibits are public documents and may be obtained or viewed at the Commission offices unless legal restrictions apply.

A map of ground conductivity for the United States and Canada is appended to the Commission's Standards of Good Engineering Practice for

Broadcast Stations and may be obtained from the Government Printing Office. Data used in map compilation is generally the result of surveys either by field measurements or calculations. Base maps used are provided by the Geological Survey, Coast and Geodetic Survey, Bureau of Census, and other agencies.

FEDERAL POWER COMMISSION

The Federal Power Commission prepares and publishes maps showing electric power generating stations and transmission systems, and facilities for production and distribution of natural, manufactured, and mixed gas.

The electric power maps are issued in four series, the scales being one-inch equals 40 miles, one-inch equals 32 miles, one-inch equals 16 miles, and one-inch equals 8 miles. The source material consists of reports furnished to the Commission by electric utilities and industrial companies. The 40-inch per mile map is a wall map and is scheduled for revision as soon as the 8-inch per mile series has been completed. The 32-mile per-inch map was completed in 1945, the 16-mile per-inch map was completed in 1946, and during the year preliminary compilation of the 8-mile per-inch series was completed for about one-third of the United States.

Two series of maps pertaining to gas are produced. State Natural Gas Maps at the scale of about 18 miles per inch have been completed for 33 states, and a new wall map, scale 60 miles per inch, of the United States showing natural gas pipe lines in color, will soon be issued. Restrictions imposed on distribution of these maps during wartime have been removed and copies are now available.

FIELD SERVICE BRANCH (A)

(Formerly Agricultural Adjustment Administration)

This agency completed the aerial photographic and mosaic work assigned by the War and Navy Departments during the year and resumed its normal work on a moderated scale. This work includes acquisition of aerial photography as needed, and the preparation of ratioed aerial enlargements and mosaics for use in administering its conservation programs. New photography of various areas was contracted for, some of which involved areas where existing photography had become obsolete to the degree of being unsuitable for the intended use.

FOREST SERVICE (A)

This agency, which accomplished a number of mapping and charting assignments for the armed services during the war, was converted during the past year to its normal work, which includes the preparation of planimetric and occasionally topographic maps necessary for the administration of national forests. Aerial photographs also play an important part in management, utilization, and protection work in the forests.

The office photogrammetric activities are located in Alexandria, Va. Planimetric maps are now in various stages of preparation for ten areas in Arizona, California, Idaho, Montana, Oregon, and Washington. For certain other areas in Arizona, California, Oregon, and Washington, topographic maps are being prepared to fill an immediate need for determining road locations to stands of timber in highly inaccessible regions.

A series of administrative maps of National Forests are maintained and currently revised as boundaries and other pertinent changes take place.

GEOLOGICAL SURVEY (I)

This agency is charged with the task of making and maintaining an inventory of the nation's mineral wealth, and its terrain, as well as water resources. The terrain inventory—topographic surveys—covers but half the country, and much of the earlier reconnaissance work is in need of revision to meet present requirements. During the year, the Survey readjusted its facilities to the demands of a greatly expanded domestic mapping program.

Approximately 5,300 topographic maps, and 800 planimetric maps, have been published by the Geological Survey to date. Over half the topographic maps are 15-minute sheets of 1:62,500 scale, while most of the remainder are 7½-minute sheets of 1:31,680 scale. The larger-sized 7½-minute sheets of 1:24,000 scale have been produced on many special projects, and the demand for this type of topographic survey is increasing, particularly in areas of high or potentially high economic development.

During the year, 232 new topographic maps were published in addition to 438 reprints of maps whose base stock had become exhausted. In addition to many special maps, 63 geologic maps were published as well as those included in professional papers, bulletins, and water supply reports.

New topographic surveys covering approximately 28,000 square miles were completed during the year and 1,000 square miles of planimetric mapping by use of aerial photographs. The greater part of the topographic mapping was produced by photogrammetric methods supplemented by field surveys in areas of lower relief. This mapping was accomplished in 40 states, California, Illinois, Missouri, Pennsylvania, and Arizona leading in volume. An index map of the United States, showing areas covered by topographic surveys, as well as scheduled projects, is available on request to the Geological Survey's Map Information Office.

To afford necessary control for topographic surveys, over 500 triangulation stations were occupied and many secondary stations were intersected. About 8,900 linear miles of transit transverse and 14,000 miles of leveling, all of third order accuracy or higher, were completed. The results are issued in lithographed lists for quadrangle areas of 15-minute extent and are also available on request.

In connection with geologic and topographic surveys, the Geological Survey has procured to date approximately 165,000 square miles of aerial photography. Contracts have been awarded for about 98,000 square miles of new photography.

The preparation of the Transportation Map of the United States, scale 1:250,000, for the Public Roads Administration, was continued. Forty-eight sheets in Alabama, Indiana, Missouri, Nevada, and Ohio were in various stages of compilation, inking, and checking. Thirty-one sheets in Virginia, Louisiana, North Carolina, West Virginia, and the District of Columbia and vicinity were transmitted for reproduction, and 33 sheets in Texas were published.

Progress continued on the Millionth Scale map of the World. The following sheets I-18 (Hatteras); K-17 (Lake Erie); L-10 (Cascade Range); K-10 (Mount Shasta); H-14 (Austin); H-15 (Mississippi Delta) were transmitted for reproduction. Compilation and drafting were carried forward on the I-17 (Savannah); I-11 (Los Angeles), and preliminary work was started on J-17 (Blue Ridge) and H-17 (St. Augustine). Progress indexes covering the United States portion of this series are available on request.

Revisions of state maps (new compilations) are in various stages of progress and include Wyoming, Massachusetts, Rhode Island and Connecticut, New Jersey, Maryland and Delaware, and Illinois.

During the year many of the state index maps, showing the progress of topographic mapping, were revised. Such maps, owing to war restrictions and other causes, had become out-of-date in states where topographic mapping projects were active. Supplemental lists are maintained for those indexes which have not yet been revised, but the revision program should be completed during the coming year.

The special instruments and procedures of the trimetrogon system of reconnaissance topographic mapping were developed by the Geological Survey during the war. Compilation of basic data for aeronautical charts of the Army Air Forces was continued during the early part of 1946, and production was approximately 435,000 square miles. Contours at 500- and 1,000-foot intervals were added to about 299,000 square miles of the total production. This photo-topographic work is in progress for various foreign areas, including a current Antarctic project. The drafting of preliminary black and white base drawings at 1:250,000 and 1:500,000 scales was completed for 42 charts. In July this program was modified to the effect that the Trimetrogon Section now devotes much of its capacity to a long-range maintenance program, which will result in a currently up-to-date series of aeronautical charts. Complete base maps on 1:1,000,000 or 1:500,000 scales are now prepared on metal mounted boards showing all basic cartographic data ready for color separation drafting. The drafting of black and white preliminary charts has continued. The production has been approximately 44 preliminary charts since July 1, and nine complete photogrammetric base charts ready for color separation drafting. Further progress was made in the development of techniques for production of shaded relief and radar charts.

In connection with the Survey's reorganization to meet greatly increased requirements for geologic and topographic surveys, functions of the Alaskan Branch have been transferred to the Geologic and Topographic Branches, and a new division of the latter has been established with headquarters at Denver to service the many map requirements of development projects arising in the west.

The Map Information Office was reorganized and greatly expanded in service and capacity during 1946.

HYDROGRAPHIC OFFICE (N)

The Hydrographic Office is responsible for supplying the Navy with world-wide coverage of nautical charts and related publications and supplemental data such as sailing directions, light lists, and naval air pilot publications. Data for these are obtained not only from its own facilities and survey vessels but from cooperating observers sailing under every flag and by international exchange of data with similar charting organizations.

From a wartime annual production of about 45,000,000 copies, the 1946 output has been reduced to about 7,500,000 copies reproduced from more than 5,200 basic nautical, aviation, loran, and other special charts. Also produced were 250 publications of supplemental data.

Reconversion to peacetime operations has been rapid even though there are still many naval requirements for special material. Included in the latter category are such assignments as the Cross Roads project which required detailed hydrographic and oceanographic surveys of Bikini Atoll, and participation with the Army Engineers and the Coast and Geodetic Survey in triangulating from the Florida Peninsula to the Bahama Islands.

New activities during the year include the commissioning of two new survey vessels, the *U. S. S. Tanner* and the *U. S. S. Maury*. These vessels are equipped with latest charting devices, including aircraft for special aerial photographic work, reconnaissance, and transportation. A new Division of Oceanography was organized which will, with the cooperation of the Office of Naval Research, coordinate the oceanographic programs of the Navy Department, promote training and basic research at universities and laboratories, collect and codify oceanographic data, and prepare charts, manuals, and special reports therefrom. While the entire field of oceanography will be covered, the greatest emphasis will be on the physical and geological phases.

The Ice Atlas of the Northern Hemisphere, recently published, contains all available information on monthly conditions of sea ice, degree of navigability of various routes, opening and closing of navigation dates for rivers, and other related data. This publication is based on data from about 2,000 shore station localities, and in many cases records extend over a period of 50 years.

Atlases, which show resultant monthly surface currents in each one-degree quadrangle, have already been published for the north Atlantic, northwestern Pacific, and Indian oceans and one for the northeastern

Pacific is in preparation. These atlases will eventually be prepared for all oceans on the globe.

For the Arctic and Antarctic regions special charts and tables for polar navigation have been produced.

INTERNATIONAL BOUNDARY COMMISSION

This commission is concerned with the establishment and maintenance of the international boundaries between the United States, Alaska, and Canada. Its work is comprised of inspection, repair, and replacement of monuments, triangulation stations, and bench marks. It also erects additional monuments where the line crosses international highways and maintains a 20-foot open vista where the line extends through forests. During the year, work of this nature was done on four sections of the boundary, including quite extensive triangulation surveys along the Maine-New Brunswick section.

INTERNATIONAL BOUNDARY AND WATER COMMISSION

This Commission prepares maps needed for the official discharge of its responsibilities in connection with the United States-Mexico boundary and with the administration of water resources along it. During the year, topographic maps were prepared for two major reservoir areas. For a third site an aerial photography project was initiated, and mosaics will ultimately be prepared from the photographs. In each of these three areas, the mapping extended into Mexican territory.

LAKE SURVEY OFFICES (W)

The Lake Survey of the Corps of Engineers maintains charts of the Great Lakes, Lake Champlain, New York channels, Lake of the Woods, and Rainy Lake, primarily for navigation use. They show the hydrography of water areas and topography of limited areas of the contiguous shores and islands so as to show the docks, structures, and the landmarks visible from the lakes and channels. Various scales are employed to portray features in sufficient detail for the purpose of the different classes of charts. The small scale of the general lake charts is suitable for the needs of open-lake navigation; the medium scales of coast, river, and sectional charts afford greater detail for the closer navigation in the areas covered; and the largest scales show the details pertinent to restricted navigation in harbors and confined localities. Surveys during 1946 were limited to those required for maintenance and revision of charts.

LIBRARY OF CONGRESS DIVISION OF MAPS

The Division of Maps administers a collection of approximately 1,000,000 maps, 11,000 atlases, and 70 globes which give extensive areal, subject, and historical coverage. To these collections come all maps, geographical atlases, and globes deposited for copyright, all unclassified maps published by government agencies, thousands of maps and atlases received through international exchange, and many items acquired by purchase and gift. In addition, the Library's collections contain a wide selection of geographical and cartographical publications upon which the Division of Maps may draw.

During the year, approximately 190,000 maps were distributed to public, college, and university libraries and 400.000 more are now held for similar distribution. In addition to having maps and geographical information available to persons visiting the Library, much information is given through correspondence, loans of maps and atlases, and the furnishing of photographic reproductions.

An active program for augmenting the collection of state and local maps is under way. As a first step, the Library is communicating with all cities in the United States to acquire their latest plans.

MAP INFORMATION OFFICE (U. S. GEOLOGICAL SURVEY) (I)

During the year, this office was reorganized by the Geological Survey and expanded from its dormant wartime status of one or two employees into a service organization of 22 research specialists and assistants. The office was formerly an agency of the Federal Board of Surveys and Maps and was continued in the Geological Survey when other functions of the Board were transferred to the Bureau of the Budget.

The maintenance of complete information on all published, or otherwise available, topographic maps, aerial photography, mosaics, and geodetic control, as well as data pertaining to work in progress and new schedules of the various Federal agencies, are the primary functions of the Map Information Office.

A preliminary study of the status of topographic mapping in the United States, with a tentative evaluation, has been completed, and copies of the resulting index map and descriptive text are available on request. A similar study of aerial photography has been made, and the results have been published in map and text form. Index maps of the United States showing all vertical and horizontal control survey suitable for various engineering requirements, as well as control of topographic maps and photo-mosaics. will be compiled and published in the near future.

The bulletin on map collections maintained in the vicinity of Washington is being revised and will include statements concerning the activities now pursued by the Federal agencies engaged in surveying and mapping as well as the present development of major map collections and research facilities.

In addition to the functions mentioned, the preparation of exhibits and press articles concerning topographic mapping has been assigned to the Map Information Office. Information requests by Survey production offices, other Federal and state agencies, and the general public, increased enormously during the year, and the awakening map consciousness of the nation at large makes inevitable an accelerating increase in service requests.

DIVISION OF MAP INTELLIGENCE AND CARTOGRAPHY (S)

The Map Library of the Department of State now constitutes one of the three or four major map collections in the United States. It does not attempt to compete with the Army Map Service, the Hydrographic Office, or the Aeronautical Charts Service in the field of topographic maps, nautical charts, and aeronautical charts, or with the Library of Congress in the collection of domestic and historical maps. The Library does contain, however, an unusually comprehensive and up-to-date collection of specialty maps covering political, economic, and social aspects of foreign areas. The Library contains approximately 2,500,000 foreign maps and more than 15,000 atlases, gazetteers, and other cartographic reference items. It has a monthly turnover of more than 100,000 items, and it catalogs and indexes all new acquisitions which are subsequently filed according to an area and subject breakdown for ready reference.

The Map Library contains the map resources of several war agencies as well as the maps and map reference materials collected by the Division of Geography and Cartography (Ge) in the Department of State. The Library distributes maps and provides map reference and procurement service to authorized government agencies.

Specialized research is carried on to provide official agencies with evaluations of maps, and new maps are compiled at medium and small scales to fulfill special requirements of the Department of State and other official agencies.

MISSISSIPPI RIVER COMMISSION (W)

This Commission is responsible for improvement of the lower Mississippi and tributaries in the alluvial valley for flood control and navigation. For this purpose the Commission maintains a series of topographic maps, 220 in number, covering an area of more than 52,000 square miles. During 1946, 17 new maps were published, and the fourteenth edition of the map folio for navigation was revised as well as the index of topographic maps. An exhaustive study pertaining to geologic investigation in the alluvial valley was published. Folios of navigation maps of various tributaries were revised and republished.

OFFICE OF INDIAN AFFAIRS (I)

This agency prepares maps and procures aerial photography, primarily for use in administering Indian reservations. During the year, old maps of three such reservations were revised, and work was started on one new reservation map. Present plans contemplate obtaining new aerial photography for the remaining 37 reservations as quickly as possible; for preparing mosaics from this photography; and for preparing planimetric maps by direct transcription from the mosaics. The total area of the reservations remaining to be so mapped is slightly over 24,000 square miles.

PUBLIC ROADS ADMINISTRATION (FWA)

During 1946, the Public Roads Administration published one new transportation map (Texas) comprising 33 sheets and revised editions for five states aggregating 40 sheets. It completed, since Dec. 1, 1945, 24 maps of the State-wide Highway Planning Survey County Series of which 15 are highway base maps, and nine show surfacing types. There remain uncompleted in Georgia, New York, and Pennsylvania, maps for 87 counties. Of these, work is in progress on all but six counties, and prints of the uncompleted maps are obtainable for 75 counties. General highway maps of all but seven have been compiled.

Prints or photolithographic reproductions of both county and state maps are obtainable by purchase from the State Highway Departments of the several states at approximately the cost of reproduction. The country maps have been drawn to scales of approximately one or two inches to the mile. Many of the states have published half-scale reproductions which are available at considerably reduced prices. The state maps are generally compiled at the scale of one-inch to eight miles.

A wall map of the United States, 5 x 7 feet, showing the system of numbered highways, is published in two sheets. A map about 28 x 42 inches (scale 1:5,000,000) is also published. They are available from the Superintendent of Documents, Government Printing Office, for $1 and 25 cents, respectively.

SOIL CONSERVATION SERVICE (A)

This agency prepares and publishes maps showing physical land conditions with particular relation to soil erosion and conservation studies and also prepares mosaics from aerial photographs for field use in the various Soil Conservation Districts.

During the year, conversion from war assignment work for the armed services to peacetime activities took place, and physical land maps were prepared for areas in Ohio, Georgia, Florida, Oregon, Kansas, and Alaska. Numerous mosaics of conservation districts were prepared, and large new projects were initiated in Colorado and New Mexico. Copies of the mosaics and the maps are available for distribution.

SOIL SURVEY (BUREAU OF PLANT INDUSTRY, A)

After a suspension of field soil surveys during the war period, activities on this work were again resumed about mid-year, and by the end of the year this agency and cooperating state agencies had completed new soil surveys on about 1,150,000 acres of land.

During the year, ten detailed soils maps and accompanying explanatory bulletins were issued, making a total of 1,550 such reports issued to date. The new reports pertained to areas in California, Indiana, Kentucky, Missouri, Tennessee, Virginia, and Utah. Similar reports will be issued for the areas in which the new field work was accomplished.

TENNESSEE VALLEY AUTHORITY

When the war intervened, the Tennessee Valley Authority was engaged in preparing standard 7½-minute quadrangle topographic maps of the Tennessee River watershed at a scale of 1:24,000. (See THE AMERICAN YEAR BOOK, 1943, page 297, and 1944, page 291.) After a four-year lull, work was resumed, and during 1946 final edition maps were published for approximately 2,000 square miles.

Property surveys for the Watauga Reservoir, on which work had been discontinued because of material shortages, were resumed and predredge surveys were made in the upper end of Pickwick Reservoir for navigation channel improvements. (See THE AMERICAN YEAR BOOK, 1943, page 297 for description of cadastral and navigational mapping.)

OTHER AGENCIES

While the agencies enumerated above may be considered the principal surveying, map compiling, or map research organizations of the Federal Government, others which are extensive map users also prepare special maps and make occasional surveys of diversified nature or otherwise operate in collateral fields.

The Bureau of the Census compiles special maps for use in Census surveys. They are largely analytical in character and are used to illustrate the various census reports. The state maps showing minor civil divisions are in frequent demand. The Civil Aeronautics Administration does not publish charts and maps, but aids in the development of new charts and supplies information to the Coast and Geodetic Survey for the preparation of aeronautical charts. The Bureau of Agricultural Economics prepares statistical maps covering the entire field of agricultural production and marketing to accompany the detailed reports it issues on those subjects. The Weather Bureau prepares for distribution a daily weather map which is in great demand for a number of uses including air transportation. The National Park Service makes occasional surveys for development work, but most maps of the National Parks are prepared and distributed by the Geological Survey. Many other agencies, such as the Fish and Wildlife Service, National Housing Authority, National Archives, and Bureau of Foreign and Domestic Commerce are extensive map users and as such have occasion to compile specialty items of a collateral nature.

Various state and commercial agencies contribute very substantially to the over-all production of surveys and maps, notably the highway departments and the oil industry in their geophysical and exploratory activities. Several large commercial concerns have developed extensive capacities for aerial photography and large-scale mapping and do considerable contract work for government and state organizations and the oil industry.

SURVEYING AND MAPPING SOCIETIES

The American Congress on Surveying and Mapping is dedicated to the advancement of such activities in the Western Hemisphere. Its journal, *Surveying and Mapping,* is a quarterly publication which covers this entire field. The 1946 annual meeting of the Congress was held in June at Washington, D. C.

The American Geophysical Union has a section devoted to Geodesy, while other technical sections of the Union are concerned with many collateral aspects of surveys and maps. The Union is affiliated with the National Research Council of the Academy of Sciences and publishes bimonthly *Transactions.*

The American Society of Civil Engineers has a technical division which deals with surveying and mapping, while other divisions are concerned with divergent aspects of the broad field of engineering. *Civil Engineering,* a monthly publication of the Society, is devoted to professional articles and items of general interest, while technical discussions are covered in the *Proceedings,* also published monthly.

The American Society of Photogrammetry is dedicated to the advancement of photogrammetry and serves as a clearing house for information pertaining to all phases of that science. Its journal, *Photogrammetric Engineering* is published quarterly. The Society also publishes the *Manual of Photogrammetry* which is the standard reference text in that field. Its annual meeting is usually held in January at Washington and a semiannual meeting elsewhere.

STATE GEOLOGICAL SURVEYS

By Wilson M. Laird
State Geologist, North Dakota

GENERAL

The state geological surveys or their equivalents and the state bureau of mines are carrying on their work in the same efficient fashion. These organizations render their service in a usually quiet and unspectacular manner and for the money expended they provide benefits to their respective states all out of proportion to the amount of money appropriated to them.

The work of some of the state surveys is beginning to be more appreciated in some states, as is evidenced by increased appropriations. On the other hand, some of the states are receiving less now than in the war years when great emphasis was laid on strategic minerals. In several of the states, the state geologist or director of the state survey or bureau of mines is a member of the state planning board and has taken a large part in the planning of the future development of his respective state. This is of great advantage as the successful use of mineral resources is most important in the planning of future industrial development.

A number of the states have taken long strides in the matter of the public education of the citizens of their states in geological matters. This education is in the form of exhibits, printed literature appealing to the popular reader in non-technical terms, mineral industry conferences or in the nature of conducted field trips to points of geologic interest. One state geologist was recently voted the most influential citizen in science of his state. This is a high tribute to him and to the state survey he represents and to the profession of geology as a whole.

With the restrictions on the types of paper removed and availability of different types of paper, the character and attractiveness of the state survey's publications is increasing. These publications present to the citizens of the state concerned and the nation as a whole the results of their tax money spent for scientific investigations of a geologic nature. Whether we wish to believe it or not, we are living in an age of science, and the people must be kept informed of the progress of scientific endeavor in their own state. Research in geologic fields and related sciences can and has done much to bring the nation to its present high position in the industrial and scientific economy of the world.

Cooperation with various Federal agencies has continued and appears to be increasing on a large scale. This appears to be particularly true in the field of underground water, although some states carry on their own underground water programs without cooperating financially with the U. S. Geological Survey. Most of the cooperation with the Federal Survey is on a 50-50 basis financially and, therefore, the state derives more benefit if its money is advanced for matching. The Federal Government also benefits as it gains the information and experience which is in turn applied to similar problems in all parts of the country. Thus, the nation as a whole benefits.

Some of the states are also cooperating with the U. S. Geological Survey on geologic work other than ground water. In at least one state, all the geologic work done by the state is through Federal cooperation with non-technical state employees. In a number of other cases, the cooperation is on an informal basis without written agreement. This latter type of agreement seems to be preferable at present where it is being employed. In other cases, it seems more advisable to use a written agreement.

At the present time, practically all topographic mapping is being done in cooperation with the Topographic Branch of the U. S. Geological Survey. This type of work requires specialized techniques and equipment, as well as a large trained personnel; this type of organization can best be handled by the Federal Government. It also has the advantage of providing some degree of coordination of the topographic mapping on a nationwide scale and the size and scale of the resulting maps.

With the exception of some of the more specialized skills, such as topographic mapping which can be handled best by the Federal Government, it seems that much of the work of a geologic nature should be handled in the state concerned by a state agency such as the state geological survey or the state bureau of mines. The state agency is better able to handle the day-to-day requests because of its more intimate knowledge of local conditions and the people concerned. The Federal Government can better handle large regional projects which perhaps overlap state lines or projects such as specialized fundamental research in any number of geologic problems that involve such large expenditures of funds and are too large to be handled by one state alone.

ALABAMA

Organization.—Geological Survey of Alabama, University, Dr. Walter B. Jones, State Geologist.

Basic and Economic Geology.—*Projects:* Well logs; Coosa coal field.

Publications: Red iron ores of northeast Alabama; State oil and gas regulations and forms.

Water Resources.—*Projects:* Natural water losses of Alabama; Ground water of south Alabama.

Others.—*Projects:* Beetles of Alabama.

ARIZONA

Organization.—Arizona Bureau of Mines, Tucson, T. G. Chapman, Director.

Basic and Economic Geology.—*Projects:* Relation of structure to ore deposits in western and central Arizona; Routine examination of mineral deposits; Completion of Tombstone mining district report; Barite, perlite and asbestos deposits; Volcanic cinders as concrete aggregate. *Publication:* Minerals of Arizona.

Water Resources.—*Projects:* Compilation of data relative to ground water in the Tombstone district.

Topographic and Planimetric Mapping.—*Publication:* Topographic and highway map of Arizona.

Others.—*Projects:* Compilation of mineral production statistics; Cooperation in mineral exploration with the U. S. Geological Survey and the U. S. Bureau of Mines; Compilation of map showing state-owned lands in Arizona. *Publications:* Metallic mineral map of Arizona; Non-metallic map of Arizona; Map of Arizona mining districts.

ARKANSAS

Organization.—Division of Geology, Little Rock, Harold B. Foxhall, Director.

Basic and Economic Geology.—*Projects:* Rock wool; nepheline syenite for ceramics; Bentonite clay deposits; Study of the economics of coal in Arkansas; Mine mechanization and coking experiments; Brookite deposit in Hot Springs County; Ilmenite deposit in Howard County; Ilmenite in Arkansas River sands; Limestone deposits of the Batesville area; Brick clay investigations; Slate for granules.

Water Resources. — *Projects:* Stream gaging at 46 stations.

Topographic and Planimetric Mapping.—*Project:* Malvern quadrangle. *Publications:* St. Paul; Alexander, Benton; Bryant; Little Rock; Pinnacle; Spring Lake; Sweet Home quadrangles.

CALIFORNIA

Organization. — California State Division of Mines, San Francisco, W. B. Tucker, State Mineralogist.

Basic and Economic Geology.—*Projects:* Geology of the following quadrangles: Tesla, Indian Gulch, Priest Valley, Copperopolis, St. Helena, Nipomo, Hollister, San Fernando, Ubehebe Peak, Neenach, Gasquet, Hoaglin, Cerro Gordo, Cuyamaca Peak, Bishop No. 2, Mt. Goddard No. 1, Lake Elsinore; Geology of the foothill cooper-zinc belt; Tabulated list of the copper deposits of California; New Almaden quick-silver district; Weaverville copper-gold district; Geology of the Mother Lode district; Supplement to Bulletin 125 on manganese; Lead-silver-zinc bulletin and map; Silica minerals of California; Talc deposits of California; San Diego pegmatite area; Sand deposits of the coastal region of California. *Publications:* Iron Resources of California (*Bull. 129*); Geology of the San Juan Bautista quadrangle and operation of the Granite Rock Company quarry and plant at Logan (*Bull. 133*); Geological investigations of chromite in California (*Bull. 134*); Placer mining for gold in California (*Bull. 135*); Limestone in California (*Bull. 136*); California Journal of Mines and Geology for January, April, July and October 1946.

Others.—*Projects:* Economic development of metallurgy of copper and zinc in California; California mineral production for 1945. *Publications:* Economic mineral resources and production of California (*Bull. 130*); Consolidated index to Division of Mines publications (*Bull. 131*); California mineral production for 1944 (*Bull. 132*).

COLORADO

Organization.—Colorado Geological Survey, State Museum Building, Denver, Dr. Ben H. Parker, Secretary.

Basic and Economic Geology.—*Projects:* Geology and mineral resources of Cripple Creek, San Juan. Kokomo, Ophir, Leadville-Minturn-Redcliff. All work done on cooperative basis with United States Geological Survey.

CONNECTICUT

Organization.—Connecticut Geological and Natural History Survey, Hartford, Dr. Edward L. Troxell, Director.

Basic and Economic Geology.—*Projects:* Investigation of copper mine; Collection of minerals for school use; Research on loess, garnet, kaolin, pyrophylite for industrial use.

Others.—*Projects:* Chestnut tree research; Tree Census; Arboretum. *Publications:* Mosquitoes of Connecticut.

FLORIDA

Organization.—Florida Geological Survey, Tallahassee, Dr. Herman Gunter, State Geologist.

Basic and Economic Geology.—*Projects:* Micropaleontology; Geology and structure of Levy and Citrus Counties; Correlation of well data; Peat investigation; Prospecting for rare earths.

Water Resources. — *Projects:* Ground water studies; Surface water studies; Quality of water.

Others. — *Project:* Cooperative study on clay prospecting.

GEORGIA

Organization. — Department of Mines, Mining and Geology, Atlanta 3, Garland Peyton, Director.

Basic and Economic Geology.—*Projects:* Geology and mineral resources of Rabun County; Geology and mineral resources of the Paleozoic area; Preliminary oil and gas map of the Tertiaries of Coastal Plain; A survey of the iron ore resources of Polk and Barton Counties; Special study of lightweight aggregate materials in Georgia; Special study of the sericite deposits of Georgia. *Publications:* Talc deposits of Murray County (*Bull. 53*); Geology of east central Georgia (*Bull. 52*).

Water Resources.—*Projects:* Geology and ground-water resources of central east Georgia. *Publication:* Geology and ground-water resources of east central Georgia (*Bull. 52*).

Topographic and Planimetric Mapping. — *Projects:* Planimetric mapping of Paleozoic area; Planimetric map of central east Georgia; Planimetric map of Chatsworth talc area. *Publications:* Geologic map of the Tertiaries of Coastal Plain; Map of east central Georgia; Map of central east Georgia.

Others. — *Projects:* Cooperative field project to investigate radioactive minerals in Georgia. *Publications:* Geologic map in color of east central Georgia; Mineral producers directory.

IDAHO

Organization.—Idaho Bureau of Mines and Geology, Moscow, Dr. A. W. Fahrenwald, Director.

Basic and Economic Geology.—*Projects:* District reconnaissance surveys; Geologic reconnaissance of the Hailey gold belt, Blaine County; Geologic reconnaissance of the Avery area, Shoshone County; Reconnaissance survey of diatomite occurrences in southern Idaho. *Publications:* A geological reconnaissance between the Snake and Salmon rivers north of Riggins, Idaho (*Pamph. 74*); A geological reconnaissance in the Little Wood river (Muldoon) district, Blaine County, Idaho (*Pamph. 75*).

ILLINOIS

Organization. — State Geological Survey Division, State Department of Registration and Education, Urbana, Dr. M. M. Leighton, Chief.

Basic and Economic Geology.—*Projects:* Areal investigations and geologic mapping; Engineering geology reports on highway conditions and damsites; Pennsylvanian and Mississippian stratigraphy; Silurian stratigraphy; Cambro-Ordovician stratigraphy; Pleistocene system; Micropaleontological studies; Paleobotany of the Pennsylvanian; Preparation of contour map of the bedrock surface; Geology and oil and gas resources of the Illinois basin; Secondary recovery of oil in Illinois; Studies of reservoir conditions in Illinois oil pools; Classification of potentially oil-bearing areas by geologic systems; Scouting of drilling wells and cooperation with Illinois Scout Check; Mapping and study of Illinois coal resources; Lithological and botanical constitution of Illinois coals; Studies to determine the usefulness of coal spores as index fossils; Smokeless briquets from Illinois coals; Investigation of combustion behavior of Illinois coals to develop improved stoker fuels; Investigation of the suitability of low-sulphur Illinois coals for use in the production of metallurgical coke; Chemical study of tars prepared from Illinois coals in commercial and pilot plant coking operations; The chemical constitution of Illinois coals; Proximate and ultimate analysis of Illinois coals; Fluorspar resources of southern Illinois; Utilization of fluorspar; Petrology of Illinois clays; Clay mineralogy as related to soil materials and engineering problems; Surface clay resources of Illinois; Research on clay and clay products; Limestone resources of Illinois; Investigation of the physical properties of Illinois silicas; Viscosity of silicate melts. *Publications:* A major buried valley in east-central Illinois and its regional relationships (*R.I. 106*); Rosiclare-Fredonia contact in and adjacent to Hardin and Pope counties (*R.I. 112*); Kincaid corals from Illinois and Amplexoid corals from the Chester of Illinois and Arkansas (*R.I. 113*); Subsurface relations of the Maquoketa and "Trenton" formation in Illinois and oil possibilities of the Maquoketa and "Trenton" formations (*R.I. 105*); Marine pool, Madison County—a new type of oil reservoir in Illinois (*R.I. 114*); Developments in eastern Interior basin in 1944 (*I.P. 51*); Oil and gas developments in Illinois in 1944 (*I.P. 52*); Resaturate while repressuring (*Cir. 118*); Rustless pipe for war and peace (*Cir. 120*); Oil and gas drilling reports 104-115; Coke from Illinois coals—an experimental slot-type oven (*R.I. 107*); Geological aspects of prospecting and areas for prospecting in the zinc-lead district of northwestern Illinois (*R.I. 116*); Amenability of various types of clay minerals to alumina extraction by the lime sinter and lime-soda sinter processes (*Bull. 69*); Illinois surface clays as bonding clays for molding sands (*R.I. 104*); Molecular association between montmorillonite and some polyfunctional liquids (*R.I. 108*); Bonding action of clays; Clays in dry molding sands (*R.I. 110*); Viscosity studies of the system CaO-MgO-Al_2O_3-SiO_2: I, 40% SiO_2 (*R.I. 111*); Diagnostic criteria for clay minerals (*R.I. 115*); Agstone used in Illinois in 1944 (*Cir. 119*).

Water Resources. — *Projects:* Ground-water geology of industrial, urban, and special areas; Electrical resistivity surveys for subsurface water-bearing sand and gravel deposits; Geophysical logging of water wells; Cooperation with Illinois Water Well Drillers Association. *Publications:* Use of electrical geophysical methods in ground-water supply (*Cir. 122*).

Topographic and Planimetric Mapping.—*Projects:* Following quadrangles: Alton, Augusta, Barrington, Bethalto, Buckley, Camp Grant, Camp Point, Coal Valley, Crete, Cullom, Davenport, Dunlap, Edwardsville, Elgin, Elmwood, Fairfield, Geneva, Grays Lake, Hillsboro, Joliet, Kansas, Kings, Kinmundy, Marine, McHenry, Mendon, Milon, Morris, Morrisonville, Muscatine, Orion, Pana, Paris, Peoria, Peotone, Piper City, Prairie Home, Ramsey, Ridgefarm, Rockford, St. Jacob, Silvis, Stewardson, Vandalia, Wapello, Wayne City, Wheaton, Wilmington, Woodhull, Wood River, Woosung, Yorkville. *Publications:* Following quadrangles: Albion, Ashley, Bradford, Forreston, McLeansboro, Shelbyville.

Others.—*Projects:* Economic review of mineral industries; Atlas of Illinois resources; Long term manufacturing opportunities in Illinois; Handbook of fuels data; Studies of southern Illinois economic problems. *Publications:* Oil and gas map of Illinois; Soil survey maps.

INDIANA

Organization. — Indiana Department of Conservation, Division of Geology, Bloomington, Dr. Charles Deiss, State Geologist.

Basic and Economic Geology.—*Projects:* Compilation of Indiana mineral industries catalog; Microscope study of oil and gas well cuttings as basis for subsurface stratigraphy; Special consulting for operators; Large scale mapping and analysis of clay deposits in Lawrence County. *Publications:* Stratigraphy of four deep wells in eastern Indiana (*R.P. 1*); The Physiography of the lower Wabash Valley (*Pub. 134*); The Budda outliers of the Mansfield sandstone, Lawrence County, Indiana; The Geology of Cataract Falls, Owen County, Indiana.

Water Resources.—*Project:* Projects in cooperation with Division of Water Resources and United States Geological Survey.

Others.—*Publication:* Monthly oil and gas drilling reports; Oil and gas activities in Indiana in 1945

IOWA

Organization. — Iowa Geological Survey, Iowa City, Dr. A. C. Trowbridge, Director and State Geologist.

Basic and Economic Geology.—*Projects:* Pleistocene history of the Mississippi River; Stratigraphy of the Upper Des Moines series; Geology of Floyd County; Subsurface geology of the Cambrian strata of Iowa; Revision of the Kinderhook formations in Iowa; Bibliography of Iowa geology; Subsurface studies of the Kinderhook and Osage groups in southeastern Iowa; Summary of the agricultural limestone resources in south-central Iowa; Mineral production reports.

Water Resources. — *Projects:* Ground-water resources of Cerro Gordo County; Geology and ground-water resources of Webster County; Geology and ground-water resources of Cedar Rapids and vicinity; Mineral analysis of underground waters of Iowa; Surface water resources of Iowa 1942-44.

Others.—*Publication:* Mineral resources map of Iowa.

KANSAS

Organization. — State Geological Survey of Kansas, Lawrence, Dr. R.

C. Moore, State Geologist, Dr. J. C. Frye, Executive Director.

Basic and Economic Geology.—*Projects:* Geology and oil and gas resources of Crawford County; Collection of mineral statistics; New mineral resources map of Kansas; Geologic cross sections of eastern Kansas; General stratigraphic and lithologic studies in eastern Kansas; Chemical analysis of Kansas rocks and minerals; Oil and gas resources of Bourbon County, Neosho County, Chautauqua County; Oil and gas developments in eastern and western Kansas in 1946; Oil and gas resources of Miami County; Structural development of the Salina Basin; Subsurface rocks of the Upper Cambrian and Lower Ordovician age in Kansas; Investigation of oil shales in Kansas; Collection of well samples, cores and logs; Subsurface stratigraphy along the west flank of the central Kansas uplift; Coal resources of the Wabaunsee group; Lignite resources of the Dakota formation of Cretaceous age in north-central Kansas; Clays of the Dakota formation of Kansas; Preliminary report of Kansas clays; Molding sand resources of Kansas; A study of flint gravel deposits in eastern Kansas; Industrial uses of ceramic slag; Petrology and uses of quartzitic sandstones of the Dakota formation in central Kansas; Special tests and studies of clays near Great Bend. Norton, and other communities for brick and tile plants. *Publications:* The Cheyenne sandstone and adjacent formations of part of Russell County (*Bull. 60*); Exploration for oil and gas in western Kansas during 1946 (*Bull. 62*); Petrographic comparison of Pliocene and Pleistocene volcanic ash from western Kansas (*Bull. 64*); Silicified rock in the Ogallala formation (*Bull. 64*); Strip mined areas in southeastern Kansas coal field (*Bull. 64*); Oil and gas investigations preliminary cross section No. 1; Oil and gas investigations preliminary cross section No. 2.

Water Resources.—*Projects:* Geology and ground-water resources of Equus beds area, Kiowa County, Seward County, Scott County, Pawnee and Edwards County, Jewell and Republic County, Kansas City industrial area, Lower Arkansas valley, Stafford and Barton County, Norton County, Kingman County, Rice County, Smoky Hill valley from Lindborg to Junction City, Pawnee Valley, North fork of the Soloman river; Observation well program. *Publications:* Geology and ground-water resources of Grant, Haskell, and Stevens Counties (*Bull. 61*); Ground-water conditions in Elm Creek valley, Barber County, with special reference to contamination of ground water by oil field brine (*Bull. 64*); Ground-water conditions in the Arkansas River valley in the vicinity of Hutchinson, Kansas (*Bull. 64*).

Topographic and Planimetric Mapping. — *Projects:* Topographic mapping in Cherokee, Crawford, Labette, Neosho, Allen, Leavenworth, Jefferson and Bourbon Counties. *Publications:* Pittsburg, McCune quadrangles.

Others. — *Publication:* Glimpses from Resource-Full Kansas.

KENTUCKY

Organization.—Kentucky Department of Mines and Minerals, Geological Division, Lexington, D. J. Jones, State Geologist.

Basic and Economic Geology.—*Projects:* Compilation of deep well data.

Water Resources.—*Projects:* One ground-water project covering four counties; One state-wide water survey.

Others.—*Project:* Limestone analysis. *Publications:* Three county geographic maps.

LOUISIANA

Organization.—Louisiana Geological Survey, Baton Rouge, Paul Montgomery, State Geologist.

Basic and Economic Geology.—*Projects:* Geology of Red River, DeSoto, Webster Allen Beauregard parishes; Oil and gas reserve estimates, basic and recalculations; Investigation of ceramic possibilities of Louisiana. *Publications:* Geology of DeSoto and Red River parishes; Field report on the Great Delhi area, Richland Parish, Louisiana.

Water Resources.—Projects: Special investigations in specific problem areas.

MAINE

Organization.—Maine Geological Survey, Orono, Dr. Joseph M. Trefethen, State Geologist.

Basic and Economic Geology.—*Projects:* Investigations on gold, feldspar, limestone and clay. *Publications:* Petrology of the Columbia Falls quadrangle (*Bull. 3*); Aroostook County manganese deposits (*Bull. 4*); Pegmatites of Topsham area (*Bull. 5*).

MARYLAND

Organization.—Department of Geology, Mines and Water Resources, Baltimore 18, Dr. Joseph T. Singewald, Jr., Director.

Basic and Economic Geology.—*Projects:* Geologic mapping Montgomery County; Petrography and paleontology of cores and cuttings from two eastern shore wells drilled to bedrock; Fire clays of Allegany and Garrett Counties. *Publications:* Carroll and Frederick Counties Report.

Water Resources. — *Projects:* Ground-water resources of the Baltimore area; Ground-water resources of southern Maryland.

Topographic and Planimetric Mapping. — *Projects:* Remapping Prince George's and Garrett Counties maps. *Publication:* Prince George's County.

MICHIGAN

Organization.—Geological Survey Division, Michigan Department of Conservation, Lansing, Gerald E. Eddy, State Geologist.

Basic and Economic Geology.—*Projects:* Limestones of southeastern Michigan; Niagaran formations; The Marshall formation; The Pleistocene; Public education in geology; Stratigraphic research in petroliferous formations; Study of the Crystal Falls, Iron River, and Amasa districts of Iron County; Geology of western Marquette range; Geology of Ropes gold mine area near Ishpeming; Investigation of non-metallic resources along Pennsylvania Railroad right of way. *Publications:* Pre-historic Mackinac Island (*Pub. 43*); Geology of the Mackinac Straits region (*Pub. 44*).

Water Resources.—*Projects:* Survey of water wells in the State; Study of city water supply problems of Flint, Holland, Mt. Pleasant, Kalamazoo, Battle Creek, and Benton Harbor; Investigation of lake level control problems; Ground-water fluctuations in north-central Michigan. *Publications:* Ground-water resources of the Lansing area; Ground-water resources of the Benton Harbor area.

Others.—*Publications:* Biennial report of the State Geologist; Minerals find new use—nylon; Exercise control when selecting location on Lake; Ways sought to control wave action; Biology in Michigan geologic column; Oil and gas in Michigan in 1945; Annual appraisal report on iron and copper mines; Annual statistics covering iron mining costs.

MINNESOTA

Organization.—Minnesota Geological Survey, Minneapolis, Dr. George M. Schwartz, Director.

Basic and Economic Geology.—*Projects:* Geology of Cook County; Geology of the Duluth metropolitan area; Revision of the paleontology and stratigraphy of the Cambrian and Ordovician beds; Revision of the geology of the Mesabi range; Revision of the geology of the Cuyuna range.

Water Resources.—*Project:* Geology and water resources of northeastern Minnesota.

Topographic and Planimetric Mapping.—*Project:* Cooperative program with the U. S. Geological Survey.

MISSISSIPPI

Organization.—Mississippian State Geological Survey, University, Dr. William C. Morse, State Geologist.

Basic and Economic Geology.—

Projects: Itawamba County mineral resources; Lafayette County mineral resources. *Publications:* Light-weight aggregate (*Bull. 61*); Rock wool (*Bull. 62*); Lee County mineral resources (*Bull. 63*).

Water Resources. — *Projects:* Ground-water supply of Jackson, Mississippi; Ground-water resources of 19 counties of the Alluvial plain; Regular stream gaging program.

MISSOURI

Organization.—Geological Survey and Water Resources Division, Department of Business and Administration, Rolla, Dr. Edward L. Clark, State Geologist.

Basic and Economic Geology.—*Projects:* Geology of the Gulf coast embayment; Geology of Bates County; Geology of the Alice Mine district; Geology of the Wellsville quadrangle; Post-Cambrian igneous activity in southeastern Missouri; The fauna of the Chester series in southwestern Missouri; The Pleistocene deposits of Missouri; Studies in the disseminated lead belt; Structural control of the zinc deposits in the Tri-State district; Geophysical studies in the Fredericktown district; The Floyd Tower magnetic anomaly; The iron deposits of Pilot Knob and Iron Mountain districts; The extraction of feldspar from Missouri granites; Barite mining district of Washington County; The clay resources of the Polo gas field; Light weight aggregates from shales; The limestones and dolomites in St. Louis County. *Publications:* The mineral deposits of Morgan County (*R.I. 2*); The marble industry in Missouri (*R.I. 3*); Addresses presented at the dedication of the Buehler building (*I.C. 1*); Research in the mineral industries (*I.C. 2*); Post-Cambrian igneous activity in southeast Missouri (*R.I. 4*); Geophysical technique applicable to Missouri (*I.C.*); Insoluble residue zones of the Lower Ordovician rocks of Missouri (*R.I.*).

Water Resources.—*Projects:* Continuous gaging of approximately 87 stations; Miscellaneous efficiency testing of deep wells.

Topographic and Planimetric Mapping. — *Projects:* Continuous mapping of about 40 quadrangles. *Publications:* Topographic quadrangles as follows: Berryman, Boss, Bradleyville, Couch, Cureall, Ellington, Florida, Grandin, Lesterville, Millersburg, New Florence, Sedalia East, Sedalia West, Thayer, Van Buren, West Plains.

Others.—*Publication:* Biennial report of the State Geologist, 64th General Assembly.

MONTANA

Organization.—Montana State Bureau of Mines and Geology, Butte, Dr. Francis A. Thomson, Director.

Basic and Economic Geology.—*Projects:* Completion of state geologic mapping; Study of deeper horizons as possible sources of petroleum; Study of the factors controlling deposition of Montana ore deposits in sedimentary rocks; Study of the Hecla (Bryant) mining district; Compilation of information on placer mining and gold placers in Montana; Study of the geology and ore deposits of the Highland district; Study of the occurrence and utilization of talc, kyanite and graphite. *Publications:* Stratigraphic sections of the Upper Paleozoic and Mesozoic rocks in south-central Montana; Mississippian and Devonian stratigraphy of northwestern Montana (*USGS Prel. Chart 15*); Devonian stratigraphy of central and northwestern Montana (*USGS Prel. Chart 25*).

Water Resources.—*Projects:* Continuation of general ground-water studies.

Others.—*Projects:* Study of the mining problems of small mine operators and prospectors; Mineral dressing studies for the beneficiation of Montana ores.

NEBRASKA

Organization.—Conservation and Survey Division, Lincoln, Dr. G. E. Condra, Director and State Geologist.

Basic and Economic Geology.—*Projects:* Surface and subsurface studies; Bryozoan studies; Oil field subsurface studies; Stratigraphic study of coal deposits; Mineral resource studies. *Publications:* Correlation of the Pleistocene formations of Nebraska.

Water Resources. — *Projects:* Ground-water resources of the southeastern Nebraska counties; Central Platte valley; Permeability tests; Water table observations. *Publications:* Five informal county reports; Ground water of the Republican valley.

Others.—*Projects:* Soil inspection and correlation work; Conservation and industrial studies. *Publications:* Industrial Nebraska in outline.

NEW JERSEY

Organization.—Bureau of Geology and Topography, Trenton, Meredith E. Johnson, State Geologist.

Basic and Economic Geology.—*Projects:* Recording of new data on geology and mineral resources of New Jersey; Compilation of logs of deep wells; Continued investigation of iron ore prospects; Investigation of ore genesis and relations in operating mines; Investigations of limesand and feldspar. *Publication:* Differential thermal analysis of New Jersey clays.

Water Resources.—*Project:* Continued study of the ground-water resources of New Jersey.

Topographic and Planimetric Mapping.—*Projects:* Atlas sheets 21, 23, 29; Maintenance of geodetic control monument system. *Publications:* Atlas sheets 23, 25, 29, 33, 36.

Others.—*Publication:* Bibliography and index of the geology of New Jersey, 1943-1945 (*Bull. 59*).

NEW HAMPSHIRE

Organization.—Mineral Resources Committee, New Hampshire State Planning and Development Commission, Durham, T. R. Myers, Geologist.

Basic and Economic Geology.—*Projects:* Surficial geologic map of New Hampshire; Preliminary examination of foundry sands and clay deposits; Mineralogy of New Hampshire sands; New Hampshire till types; Mapping of the surficial deposits of the Winnipesaukee and Wolfeboro quadrangles. *Publication:* Geology of the Mount Washington quadrangle.

Water Resources.—*Projects:* Continuation of ground-water studies; Cooperative project on Hatchery water supplies.

NEW MEXICO

Organization.—New Mexico Bureau of Mines and Mineral Resources, Socorro, Dr. E. C. Anderson, Director.

Basic and Economic Geology.—*Projects:* Geology of the Gran Quivira quadrangle; Geology of the Cerro Venado and southern Chupadera Mesa areas; Preliminary report on oil field corrosion in southeastern New Mexico; Engineering and production data for Eddy County oil fields; Mineral resources of Colfax County; Examination and sampling of perlite, pumice and clay deposits. *Publications:* Building blocks from natural lightweight materials of New Mexico (*Bur. Mines Bull. 24*); Fluorspar resources of New Mexico (*Bur. Mines Bull. 21*); Mica deposits of the Petaca district, Rio Arraba County (*Bur. Mines Bull. 25*); Future oil possibilities of New Mexico (*Bur. Mines Cir. 12*); Subsurface geology of Quay County (USGS Oil and Gas Prelim. Chart).

NEW YORK

Organization.—New York State Science Service, Office of the State Geologist, Albany, Dr. J. G. Broughton, Assistant State Geologist.

Basic and Economic Geology.—*Projects:* Geology of the Fort Ann quadrangle; Map of depth to Pre-Cambrian basement; Map of oil fields under flood; Magnetic survey of Adirondacks; Economic geology of Lockport dolomite. *Publications:* Subaqueous mud cracks formed by settling; Ordovician cephalopods of the Cincinnati region; A new lower Chemung crinoid; The Clinton of western and central New York; Ice contacts and the melting of ice below a water level; Kame complexes and perforation deposits; Future possibilities for oil and gas in New York

State; An example of the development of cleavages.

NEVADA

Organization.—Nevada State Bureau of Mines, Reno, Jay A. Carpenter, Director.

Basic and Economic Geology.—*Projects:* Geologic and mining bulletins. *Publication:* Bibliography of geologic maps of Nevada areas.

NORTH CAROLINA

Organization. — North Carolina Department of Conservation and Development, Mineral Resources Division, Dr. Jasper L. Stuckey, State Geologist.

Basic and Economic Geology.—*Projects:* Review of mineral industry 1935-1945; Oil possibilities in the Coastal Plain; Exploration of Deep River coal field; Limestones of the Coastal Plain; Light-weight aggregate resources of North Carolina; Pegmatite resources of the Bryson City area; Vermiculite reserves of Macon County; Talc deposits of North Carolina; Economic geology of the Asheville area; Physical characteristics of sheet mica. *Publications:* Residual kaolin deposits of the Spruce Pine district (*Bull. 48*); Mica deposits of the Franklin-Sylva district (*Bull. 49*); The Vermuculite deposits of North Carolina (*Bull. 50*); The occurrence of sillimanite in North Carolina (*I.C. 4*).

Water Resources. — *Projects:* Ground-water survey of North Carolina. *Publication:* Ground Water in the Halifax area (*Bull. 51*).

Topographic and Planimetric Mapping. — *Project:* Chapel Hill quadrangle.

Others.—*Publication:* Mineral raw materials for roofing manufacture (*R.I. 2*).

NORTH DAKOTA

Organization.—North Dakota Geological Survey, Grand Forks, Dr. Wilson M. Laird, State Geologist.

Basic and Economic Geology.—*Projects:* Geology of the Oberon quadrangle; Geology of the Flora quadrangle; Geology of the Maddock quadrangle; Geology of the cement rocks and limestone of North Dakota; Study of clays for insecticide bases; Geology of the White River formation; Study of Lake Agassiz; Geology of the Kelly Slough area. *Publication:* The Keene Dome, Northeast McKenzie County, Part I, The Subsurface stratigraphy of the Nesson anticline, Part II (*Bull. 21*).

Water Resources. — *Projects:* Ground-water studies at the following municipalities: Aneta, Beulah, Buxton, Fargo, Fessenden, Hope, Kindred, Maddock, Michigan, Minnewaukan, Portland, Sharon, Wilton, Wimbledon and Zeeland; County studies of Wells and Benson Counties; Observation well program. *Publications:* Ground water in the Fessenden area (*N. D. Ground Water Studies No. 1*); Ground water in beach deposits of glacial Lake Agassiz near Mountain, North Dakota (*N. D. Ground Water Studies No. 2*). All ground-water work done in cooperation with the State Water Conservation Commission and the United States Geological Survey.

OHIO

Organization. — Geological Survey of Ohio, Columbus 10, Dr. George W. White, State Geologist.

Basic and Economic Geology.—*Projects:* Monongahela formation; Coshocton County; Perry County; Lucas County; Holmes County; Collection of oil and gas well samples and examination; Coal outcrop maps; Limestones of eastern Ohio; Sharon conglomerate and sandstone; Industrial minerals maps. *Publications:* Iron ore bearing formations of Ohio (*Bull. 45*); Occurrence of flint in Ohio (*Bull. 46*); Ohio mineral resources—revised (*I.C. 1*); Salt reserves; Geologic interpretation of scenic features in Ohio (*R.S. 3*).

OKLAHOMA

Organization. — Oklahoma Geological Survey, Norman, Robert H. Dott, Director.

Basic and Economic Geology.—*Projects:* Geology and mineral resources of Tulsa County; Subsurface structure map of Oklahoma; Geology and fuel resources of Le Flore and Haskell Counties; Titianiferous magnetite in Wichita Mountains; Mapping, sampling and analysis of high grade dolomites of Arbuckle Mountains; Woolrock; Testing ceramic clay; Bloating properties of Oklahoma volcanic ash and volcanic tuff; Oil field brines; Ceramic properties of decomposed gabbro. *Publications:* Guidebook on mineral resources field trip in Wichita Mountains; Mineral resources field trip Ada district.

Water Resources.—*Projects:* Geology and ground-water resources of Beaver, Grady, Ottawa Counties; Ground-water resources of the alluvium of North Canadian valley; Municipal supplies; Observation well program; Quality of water.

Others. — *Projects:* Cooperation with Ardmore and Oklahoma City Geological Societies in leading field trips; Oklahoma Mineral Industries Conference. *Publications:* Oklahoma needs industries; The Hopper—twelve issues per year.

OREGON

Organization.—Oregon State Department of Geology and Mineral Resources, Portland, F. W. Libbey, Director.

Basic and Economic Geology.—*Projects:* Geology of Dallas quadrangle; Microscopic examination of microfossils in long range project; Geologic mapping of Morning mine area in eastern Oregon; Progress examinations and file reports on Coos Bay coal field and Wilhoit coal mine; Investigation of mineral deposits in Curry County; Investigation of mineral deposits in Ashwood area, Jefferson County; Investigation of perlite deposits, Wasco County; Investigation of saline deposits, Lake County; Blending tests on Oregon clays. *Publications:* Geology of the St. Helens quadrangle; Reconnaissance geology of the limestone deposits in Willamette Valley; Geologic map of St. Helens quadrangle; Mineral locations map of the State of Oregon; Notes on building block materials of eastern Oregon.

PENNSYLVANIA

Organization. — Topographic and Geologic Survey, Department of Internal Affairs, Dr. R. W. Stone, State Geologist.

Basic and Economic Geology.—*Projects:* Geology and mineral resources of southeastern Clearfield County; Geology and mineral resources of Bucks County; Guidebook to the geology of the Philadelphia region; Quarter century of progress of the knowledge of the geology of Pennsylvania; Continuation of study of deep oil and gas sands; Oil and gas of the Warren and Sheffield quadrangles; Oil and gas of the Butler quadrangle; Oil and gas in the North Strabane area, Washington County; Detailed report of oil and gas sands of southwestern Pennsylvania; Oil and gas developments of Kinzua, Kane and Mt. Jewett quadrangles; Coring projects in Butter and McKean Counties; Bituminous coal strippings; Study of the brown iron ores; Study of high-alumina clay. *Publications:* Iron-manganese ore deposit at White Rocks, Cumberland County, Pennsylvania; Oil and gas field property line maps of the Titusville quadrangle; Anthracite reserves of Pennsylvania; Map of the undrilled areas of the Sheffield quadrangle.

Water Resources.—*Projects:* Intensive study of the ground-water resources of the Philadelphia and Pittsburgh areas; Continuation of the gaging of observation wells.

Topographic and Planimetric Mapping. — *Projects:* Topographic quadrangles as follows: Accident, Avilton, Driftwood, Bitumen, Friendsville, Frostburg, Grantville, Hyner, Noytsville, Houtzdale. *Publications:* Topographic quadrangles as follows: Montrose and Leraysville.

RHODE ISLAND

Organization. — Mineral Resources Committee, Providence, Dr. Alonzo Quinn, Chairman.

Basic and Economic Geology.—*Projects:* Bedrock and glacial geology of the Georgiaville and North Scituate quadrangles. *Publication:* Bedrock and glacial geology of the Pawtucket quadrangle.

Water Resources. — *Publication:* Ground water of the Pawtucket quadrangle.

SOUTH CAROLINA

Organization.—South Carolina Geological Survey, Columbia 19, Dr. Stephen Taber, State Geologist.

SOUTH DAKOTA

Organization.—South Dakota State Geological Survey, Vermillion, Dr. E. P. Rothrock, State Geologist.

Basic and Economic Geology.—*Projects:* Magnetic map of South Dakota; Structural mapping in Missouri Valley; Gravel survey in the White River Valley. *Publications:* Magnetic map and report on South Dakota; Structure in the vicinity of Mobridge; Gravels of the White River Valley; Topography of the low-lying area across the Missouri-James basin divide in Hyde and Hand Counties (*R.I. 51*); Pre-Cambrian geology of the Galena-Roubaix district, Black Hills, South Dakota (*R.I. 52*); Geology of the Missouri Valley in South Dakota (*R.I. 53*); The surface of a portion of the James basin in South Dakota (*R.I. 54*).

Water Resources.—*Projects:* Cooperative stream gaging with the United States Geological Survey; Medicinal waters of South Dakota; Fluctuation of water level in lakes and wells. *Publication:* Water supply for Sioux Falls.

Topographic and Planimetric Mapping. — *Publication:* Landmark map of South Dakota.

TENNESSEE

Organization.—Tennessee Division of Geology, Nashville 3, H. B. Burwell, State Geologist and Director.

Basic and Economic Geology.—*Projects:* Geologic mapping of the Great Smoky National Park area; Geologic mapping in west Tennessee; Economic study of the limestones of Tennessee; Mapping phosphate reserves of Tennessee; Subsurface stratigraphy and structure throughout Tennessee. *Publications:* Barite, Fluorite, Galena, Sphalerite veins of central Tennessee (*Bull. 51*); Geology of Nashville (*Bull. 53*); Geology and Mineral deposits of Bumpass Cove, Unicoi and Washington Counties (*Bull. 54*); Celestite deposits of central Tennessee (*Res. Tenn. No. 1*); Geologic map of the Mascot-Jefferson City zinc area, Tennessee.

Water Resources. — *Project:* Stream gaging in cooperation with the United States Geological Survey.

TEXAS

Organization. — Bureau of Economic Geology, University of Texas, Austin, Dr. John T. Lonsdale, Director.

Basic and Economic Geology.—*Projects:* Geology of the Christmas Mountains; Catalogue of Cretaceous Foraminifera; Geologic surveys in Trans Pecos, Texas; Geology of Gillespie and Blanco Counties; Pleistocene deposits of High Plains; Carboniferous rocks of the Llano region; Ellenburger group in central Texas; Structural map of Texas revised; Mineral resources of the Trinity River tributary area; High grade clay in Cisco group, north Texas; High grade clay in east Texas; Glass and industrial sands in north Texas; Rustler Springs sulphur deposits as a source of fertilizer. *Publications:* Contributions to Geology 1944 (*Pub. 4401*); Texas mineral resources (*Pub. 4301*); Rustler Springs sulphur deposits as a source of fertilizer (*R.I. 1*); Structural map of Texas (*Third ed.*); Oil, gas and sistillate field map of Texas.

VERMONT

Organization. — Vermont Geological Survey, Burlington, Dr. E. C. Jacobs, State Geologist and Curator of State Cabinet.

Basic and Economic Geology.—*Projects:* Areal mapping of two quadrangles.

Topographic and Planimetric Mapping. — *Publications:* Sushan, Hoosick Falls quadrangles.

Others. — *Publication:* Report of

the Vermont State Geologist for 1945-46.

VIRGINIA

Organization. — Geological Survey Division of Virginia Conservation Commission, Charlottesville, Dr. Arthur Bevan, State Geologist.

Basic and Economic Geology.— *Projects:* Geology and mineral resources of Clarke and Frederick Counties; Outline of geology and mineral resources of Augusta County; Geology of the Hot Springs district; Geology of Shenandoah National Park and environs; Geology of Virginia state parks; Common rocks and minerals of Virginia; Geology and mineral resources of Abington quadrangle; Geology and mineral resources of Buena Vista quadrangle; Geology and mineral resources of Lovingston quadrangle; Geology and mineral resources of Lynchburg quadrangle; Geology and mineral resources of Vesuvius quadrangle; Guidebook to the Lee Highway; Guidebook to U. S. route 250; A foraminiferal fauna from the Nanjemoy formation in eastern Virginia; Geology and petroleum resources of Lee County; Northeast piedmont zinc district; Gossan lead district; Industrial limestones and dolomites of Virginia; Mica deposits; Piedmont marble belt. *Publication:* An upper Eocene foraminiferal fauna from deep wells in York County, Virginia (*Bull. 67*).

Water Resources.—*Projects:* Artificial recharge in a brackish water well; Geology and ground-water resources of the York-James peninsula; Geology and ground-water resources of the northern Coastal Plain region. *Publications:* Chemical character of ground water in the Coastal Plain of Virginia (*R.S. 13*); Genesis of ground waters in the Coastal Plain of Virginia (*Econ. Geol.*).

Topographic and Planimetric Mapping. — *Projects:* The following topographic quadrangles: Boone Mill, Broadway, Callaghan, Clifton Forge, Craigs Creek, Dillon Mill, Edinburg, Goshen, New Canton, Parnasssus, Peaks of Otter, Pounding Mill, Radford, Staunton, Strasburg.

WASHINGTON

Organization. — Division of Mines and Geology, Olympia, Sheldon L. Glover, Supervisor.

Basic and Economic Geology.— *Projects:* Collecting and supplying economic information; Aid to exploration companies; Aid to prospectors; Area study of ultrabasic rocks and ore deposits; Salines, pumice, and pumicite. *Publications:* 1946 directory of mining operations (*I.C. 12*); Pumice and pumicite occurrences of Washington (*R.I. 15*).

Topographic and Planimetric Mapping. — *Projects:* Cooperative work on two quadrangles.

WEST VIRGINIA

Organization. — West Virginia Geological and Economic Survey, Morgantown, Dr. Paul H. Price, State Geologist.

Basic and Economic Geology.— *Projects:* Geologic gazetteer; Studies on acidizing Big Lime; Gas analysis; Oriskany structure map of the State; Surface tension studies on Appalachian oils; Clays of West Virginia; West Virginia brines. *Publication:* Well sample records (*Vol. XVII*).

Water Resources. — *Projects:* Ground-water studies at Wheeling airport; Parkersburg; Springs study.

Others. — *Projects:* Spectographic analysis of coal ash; Well sample studies. *Publications:* The fuel situation in western Europe; Geologist's place in service; Mineral resources of West Virginia; Evolution of geologic thought in prospecting for oil and natural gas.

WISCONSIN

Organization.—Wisconsin Geological Survey, Madison, E. F. Bean, State Geologist.

Basic and Economic Geology.— *Projects:* Lead and zinc investigations in southwestern Wisconsin.

Water Resources. — *Projects:* Ground-water surveys in widely scattered areas.

Topographic and Planimetric Mapping.—*Projects:* Aerial and topographic mapping. *Publications:* The following topographic quadrangles: Bayfield, Cornucopia, Marengo, Namekagon Lake, Odanah, Port Wing.

Others.—*Projects:* Soil Surveys in Langlade and Barron Counties.

WYOMING

Organization. — Geological Survey of Wyoming, Laramie, Dr. H. D. Thomas, State Geologist.

Basic and Economic Geology.—*Projects:* Pre-Cambrian geology of the Laramie Mountains; Geology of the Reshaw hills, Platte County; Bibliography of Wyoming geology; Geology of the Strong mine; Vanadium in Wyoming Paleozoic oils; Phosphate rock in the Lander area, Fremont County; Talc deposits in the Wheatland area; Cordierite in the Laramie Mountains. *Publications:* Geology of the northwestern Wind River Mountains, Wyoming (*Bull. 36*); Geology of the bentonite deposits near Casper, Natrona County (*Bull. 37*); Stratigraphic sections of Mesozoic rocks in central Wyoming (*R.I. 3*).

Water Resources. — *Projects:* Glendo municipal water supply; Ranchester municipal water supply; Como Bluff State fish hatchery water supply.

RECLAMATION AND IRRIGATION

By Michael W. Straus

Commissioner, Bureau of Reclamation, Department of the Interior

---

GENERAL

Works constructed by the Bureau of Reclamation, at the end of the fiscal year June 30, 1946, were bringing a full or a supplemental supply of irrigation water to 5,013,128 acres of land in the western states in which the Bureau functions. Of this total, 2,437,046 acres could receive a full supply of water from Bureau projects. This latter land was once desert, or in sagebrush, or dry farmed, and has been wholly reclaimed by works of the Bureau.

A summary of construction by the Bureau in the 44 years since it has been in operation, shows that the Bureau has built 100 storage dams and 68 diversion dams, with a reservoir capacity behind these dams of 67,897,248 acre-feet. The Bureau has also built 219,670 canal structures totaling 15,325 miles in length, and 335 tunnels running to a total of 566,521 feet. It has also laid nearly 13,000,000 feet of pipe, and nearly 1,000,000 feet of flumes.

CROPS ON RECLAMATION PROJECTS

Crops produced on 4,195,732 acres of Bureau project lands that were under cultivation during the calendar year 1945, reached a total gross value of 435,184,395. This total was achieved despite the handicaps of an uncertain labor supply, scarcity of machinery and parts, and inadequate transportation and marketing facilities. The average gross value per acre was $103.72.

Fruit was the most valuable single class of crop grown on project lands. The fruit crop in 1945 exceeded $77,717,000 in gross value. Alfalfa hay followed with a gross value of more than $64,542,000. Vegetables and sugar beets also assumed sizable proportions in gross values.

In terms of quantity, the food and forage crops on cultivated Bureau project lands totaled 11,814,337 tons, an increase of 445,341 tons over the amount reported for the previous year. The quantities for the individual crops fluctuated as compared with the previous year, but the record of 901,983 tons of fruit was 173,488 tons more than for the year before. Truck crops accounted for more than 46,000,000 bushels of the total produced, and grains, more than 36,000,000 bushels. Nearly 2,500,000 tons of sugar beets are included, and 180,760 bales of cotton.

The largest portion of the land—

24.9 per cent—was planted to alfalfa hay. Grain crops, with 20 per cent. ranked next. Fruit and nuts took only 3.3 per cent of the land under cultivation.

LAND OPENINGS—VETERANS' SETTLEMENT

As soon as possible after the end of the war, the Bureau of Reclamation inaugurated its peacetime construction program, designed to make the greatest number of farms and homes available for settlement by war veterans. Honorably discharged veterans of the Second World War were given first claim on new lands to be homesteaded as provided by Congress.

In view of the time-consuming planning and construction operations necessary to bring lands under irrigation, the amount of land made available during the first year after the fall of Japan was small, but it will grow as the program gathers momentum.

The first post-war opening of homestead lands announced in mid-1946. made available for settlement 7,527 acres on the Tule Lake Division of the Klamath project in California. The tract was divided into 86 farm units, varying from 70 to 80 acres in extent. Nearly 13,000 persons made inquiry and more than 2,000 persons filed applications for these farms.

A local examining board recommended to the Secretary of the Interior qualifications which entrymen must meet, and after eliminating those who do not meet these minimum requirements of experience, capital, industry, health, and character. the successful applicants are selected by lot from the remainder.

A second public notice announced the opening to homestead entry of 7,720 acres of public land on the Heart Mountain Division of the Shoshone project in northern Wyoming. This tract was divided into 83 farm units of varying size. Three more land openings for homesteading of 5,372 acres on three projects in the states of Washington and Idaho were scheduled.

In addition to public land openings, work is proceeding on the Columbia Basin project in central Washington. Water will be available to approximately 6,000 acres of this land in 1947, although the bulk of it must await completion of the distribution system to take water out of Franklin D. Roosevelt Lake. The government is acquiring this land at dry-land appraised values for resale in small, family-sized irrigated farms when water becomes available.

MISSOURI RIVER BASIN

The Bureau in 1946 began its part of the construction in the vast Missouri River Basin development. This program contemplates bringing irrigation water to 4,760,000 acres of land that are not now irrigated, and to 500,000 acres of additional land that are now insufficiently supplied with water.

The development, undertaken by the Bureau jointly with the Corps of Engineers, U. S. Army, involves construction of more than 100 new dams, 150 irrigation projects containing thousands of miles of canals and other facilities, 21 power plants, and the provision of safe water supplies for at least 19 communities. Montana, Wyoming, Colorado, North and South Dakota, Nebraska, Kansas, Iowa, and Missouri will benefit directly from the development.

Two dams are now under construction in the Basin by the Bureau—Kortes Dam and Power Plant, on the North Platte River, 60 miles southwest of Casper, Wyo., and Angostura Dam, on the Cheyenne River, nine miles south of Hot Springs, S. D.

Kortes Dam and Power Plant will be a concrete gravity structure, 440 feet long at the top, with a maximum height of 200 feet above the river bed. The dam will be for production of power only. The power plant, to be located at the toe of the dam, will have a generating capacity of 36.000 kilowatts, provided by three 12,000-kilowatt generators.

Angostura Dam will also be a gravity type concrete structure, extending from the left abutment across the river channel and an earth embankment extending along the right abutment. The dam will have total length at its top of 1,900 feet, and a maximum height above the river bed of 150 feet. The reservoir will have a storage capacity of 220,000 acre-feet, including 60,000 acre-feet of super storage for flood control. Water from the reservoir will irrigate about 16,000 acres of land.

Work on highway and railway relocation and camp construction is under way in preparation for starting the construction of Boysen Dam, the third unit in the program of the Bureau for the Missouri Basin. The dam will be located in Fremont County, Wyoming, on the Big Horn River. The reservoir will have a storage capacity of 820,000 acre-feet. A power plant at the dam will have an installed capacity of 15,000 kilowatts.

POWER AND RECLAMATION

The Bureau has on its projects 32 power plants distributed through most of the western states in which the Bureau operates. These plants have a total installed capacity of 2,362,800 kilowatts, which in the fiscal year 1946 produced over 12,000,000,000 kilowatt-hours of energy. The Bureau also operates more than 2,500 miles of transmission lines, of various voltages, to carry the power to market centers.

Under construction by the Bureau, or by the Army Corps of Engineers, whose power output will be marketed by the Bureau, are 12 or more power plants, which will ultimately add 1,325,600 kilowatts of installed capacity, and authorized, though not yet under construction, are 20 additional plants, with an additional capacity of 1,236,700 kilowatts. When the present program is completely realized, the total installed capacity of all power plants will be more than 6,900,000 kilowatts.

Power is now more than ever a necessary concomitant to the work of irrigation. Revenues from power sales not only defray power costs, but also make possible, financially, irrigation projects that otherwise would not be economically feasible. Again, the availability of power on the farm has brought increased production with less effort on the part of the farmer, and in the farm home, it has meant the conveniences of the city. At the low rates at which Reclamation power is usually sold, farmers have not been slow in availing themselves of it. Availability of power has also made industrial development possible, and has helped build communities which in turn have provided markets for much of the crops that are produced.

GRAND COULEE

Grand Coulee Dam and Power Plant, the key feature of the Columbia Basin project that ultimately will bring water to more than 1,000,000 acres of land in the Pacific Northwest, is rapidly being brought to completion. Three more 108,000-kilowatt generators are being installed in the left power house, to make a total of nine such generators in that power house. Three more generators of the same capacity have been ordered for the right power house, the first of nine that will be installed there. The total installed capacity at Grand Coulee when all generators are in service will be 2,190,000 kilowatts.

Six of the largest water pumps ever designed have been ordered, and six more will be ordered, which together will lift 7,000,000 gallons of water per minute from Franklin D. Roosevelt Lake, the reservoir behind Grand Coulee Dam, to an equalizing reservoir 280 feet higher than the lake. From there it will flow by gravity to create new farms to be settled by veterans and others on lands now largely arid.

DAMS UNDER CONSTRUCTION

Anderson Ranch Dam, on the South Fork of the Boise River, 40 miles southeast of Boise, Idaho, will be the highest earth-fill dam in the world, rising 444 feet above bedrock. It will be 1,350 feet long at its top. The reservoir will have a capacity of nearly 500,000 acre-feet of water, and will provide storage for irrigation, flood control, silt retention, and power production. The power plant at the dam will have an installed capacity of 27,000 kilowatts, with provision for an additional unit of 13,500 kilowatts.

Cascade Dam, on the North Fork of the Payette River, near the town of Cascade, Idaho, will be an earth and rock-fill dam, 800 feet long at the top, and 90 feet high. The reservoir will have a capacity of 700,000 acre-feet, and will provide storage for irrigation and flood control.

Davis Dam, on the Colorado River, 35 miles west of Kingman, Ariz., will be an earth and rock-fill structure, 1,600 feet long at the top, and rising 138 feet above the stream bed. The reservoir will have a capacity of 1,820,000 acre-feet, and will provide storage for irrigation, flood control, and power production. The power plant will have an installed capacity of 225,000 kilowatts, provided by five 45,000-kilowatt generators. This is the dam for which the Bureau awarded its largest contract during the fiscal year ended June 30, 1946—$21,462,505.

Horsetooth Reservoir, located approximately five miles west of Fort Collins, Col., will be formed by the construction of four earth-fill dams and Satanka Dike. The reservoir will provide storage for surplus waters of the Colorado River, diverted from the western slope of the Rocky Mountains through the Alva B. Adams Tunnel under the Continental Divide, to supply water for the water-deficient lands on the eastern slope.

Granby Dam, on the Colorado River about five miles northeast of Granby, Col., will be an earth-fill structure, 885 feet long at its crest, and rising 232 feet above the bed of the river. The reservoir will provide storage for more than 482,000 acre-feet of water.

South Coulee Dam, located near Coulee City, Wash., will be a two-mile long earth and rock-fill structure, and will form the south end of a huge irrigation reservoir in the Grand Coulee, the ice-age bed of the Columbia River. This dam, and the North Coulee, when built, will create an artificial lake, or storage basin, 27 miles long. This will be the equalizing reservoir into which the six huge pumps that have been ordered, and the six additional pumps that will be ordered, will lift water from Franklin D. Roosevelt Lake, 280 feet below the reservoir.

Potholes Dam, located on Crab Creek about 15 miles west of Warden, Wash., will be approximately 19,000 feet of continuous earth embankment varying in height up to 200 feet and extending across several depressions in the Crab Creek Basin. It will be the fourth longest dam in the United States and will have a gross storage capacity of 615.000 acre-feet.

Long Lake Dam, situated in the Long Lake Basin about 2½ miles northeast of Stratford, Wash., will be an earth and rock-fill dam 1,900 feet long, rising 111 feet above the stream bed. The reservoir formed by this dam will have a capacity of more than 62,000 acre-feet.

AQUEDUCTS, TUNNELS, CANALS

Salt Lake Aqueduct, on the Provo River project in Utah, will be 41 miles long and will tap Deer Creek Reservoir, on the Provo River about 16 miles northeast of Provo. It will provide water for industrial and domestic purposes in Salt Lake City, and also serve irrigation needs. The conduit, which consists of tunnels, sections of 69-inch inside diameter precast concrete pipeline and plate steel pipeline of various lengths, will have a capacity of 150 second-feet.

Duchesne Tunnel, on the Provo River project, about 30 miles northeast of Deer Creek Reservoir, will be six miles long, will divert water for irrigation purposes from the upper tributaries of the Duchesne River (Colorado River watershed) to the Provo River for storage in Deer Creek Reservoir. The tunnel will have a capacity of 375 cubic feet per second when unlined, and 600 feet per second when lined with concrete. It will be approximately 9 feet 3 inches in diameter, and will require permanent steel-rib liner supports and steel tunnel-liner plates in some places.

Rams Horn and Prospect Mountain Tunnels, on the Colorado-Big Thompson project in northern Colorado, will be 1.3 miles long, 10 feet in diameter, and will have a capacity of 550 second-feet. Prospect Mountain Tunnel, 1.1 mile long and 12½ feet in diameter, will have a capacity of 1,300 second-feet. The two tunnels, together with the 1.3-mile Aspen Creek Siphon, a 10-foot 9-inch diameter conduit connecting with the east end of the Alva B. Adams Tunnel, form a part of the Power Canal No. 1, which terminates at the Estes Park Power Plant, near Estes Park, Col.

Coachella Canal, a branch of the All-American Canal System, will be 145 miles long, and will serve the irrigation needs of approximately 75,000 acres of land in the Coachella Valley, Calif. The canal branches from the All-American Canal at a point approximately 18 miles east of Yuma, Ariz. and extends northwest as far as Indio, Calif. Approximately 84 miles of the Coachella Canal have been completed. The canal is designed for an initial capacity of 2,500 second-feet. It is 60 feet wide at the bottom, 124 feet wide at the top, and 16 feet deep at the section where it takes off from the All-American Canal.

Friant-Kern Canal, on the Central Valley project, California, will extend from Friant Dam to Bakersfield. This canal and the Madera Canal, which is 37 miles long and was completed in 1945, will carry water from Millerton Lake, the storage reservoir created by Friant Dam, to the fertile San Joaquin Valley. The Friant-Kern Canal will have a capacity of 4,000 second-feet. Approximately 73 miles of this canal are under construction.

Contra Costa Canal, on the Central Valley project, is almost complete. It will be 27 miles long. Industries in the Antioch-Pittsburg area in the Delta region of Central Valley were provided with water by means of this system during 1944. The canal has a capacity of 350 cubic feet per second.

Delta-Mendota Canal, on the Central Valley project, will be 120 miles long, with a diversion capacity of 4,600 second-feet. It will transport water along the west side of the San Joaquin Valley to Mendota pool. A 12.9-mile section of this canal near Patterson, Calif. and an additional 11-mile section near Tracy are under construction.

Bacon Tunnel, now being constructed on the Columbia Basin project in Washington, will be two miles long, and 23 feet in diameter.

Bacon Siphon, on the Columbia Basin project, will be 1,020 feet long, and 23 feet in diameter.

Columbia Basin Main Canal will transport water supplied from the Grand Coulee pumping plant through the Bacon Tunnel and Bacon Siphon. Portions of the canal now being constructed will have a carrying capacity of 9,700 second-feet of water and will vary in width from 95 to 200 feet at the top of the embankments. It will be from 20 to 48 feet deep.

SURVEYS AND INVESTIGATIONS

Surveys and investigations of 18 major river basins, the principal subbasins and many individual projects in 17 western states are being completed by the Bureau. The purpose of these studies is to measure the potentialities of the land and water resources of the regions, determine the engineering feasibility and economic soundness of project construction, and help in the preparation of a coordinated plan of development. Such a comprehensive report was presented to Congress on the Missouri River Basin, and was approved. Detailed surveys are now under way to perfect the plans on the units comprehended in the full Basin report.

Reports on the Colorado River Basin, Central Valley Basin, the Santa Barbara project in California, the Mountain Home project in Idaho, and the Paonia project in Colorado, have been prepared and are under review by the affected states and Federal agencies.

A report on the Lewiston Orchards project in Idaho has been completed, and Congress has authorized construction of the project.

FINANCES

To date Congress has appropriated $115,795,543 for the Bureau of Reclamation for the fiscal year ending June 30, 1947. Included in this sum is $113,610,803 appropriated in the Interior Department Appropriation Act, 1947, the largest regular annual appropriation ever made for the agency in the 44 years of its history. Later, Congress voted a supplemental appropriation of $2,184,740 for three separate projects. However, last August the President, as an anti-inflationary measure, and also as a measure to conserve materials, limited the put-in-place value of new construction to $85,000,000 for the current fiscal year. The Bureau of the Budget, after a review of the figures, the commitments and the needs, later raised the ceiling to $110,000,000.

This is considerably below the amount in work that the Bureau had scheduled for the year, but the Bureau will keep rigidly within the limitations set. These funds do not all come out of the taxpayers' pockets. A large part is repaid into the Federal Treasury over a period of years by water and power users. The cost of irrigation facilities actually in operation at the end of 1945 was about $352,000,000. Of this, more than $73,000,000 has already been repaid by water users under Reclamation Law. In addition, revenue received from hydropower users in 1945 alone totaled approximately $21,000,000.

CUMULATIVE BENEFITS

The benefits from water on the land brought by works of the Bureau of Reclamation are long range and cumulative. The cumulative total of crop values on lands irrigated from construction by the Bureau from 1906 to the end of the calendar year 1945, was almost $4,500,000,000. A total of over 90,000 irrigated farms was reported for 1945 on all Reclamation projects. The population on these farms totaled 350,000, representing an increase of 1.6 per cent for the year. Towns on or adjacent to the projects increased 3.5 per cent in population during the year. The census at the end of 1945 showed 1,050 schools, 1,429 churches, and 146 banks serving the residents of the project farms and the adjacent towns.

The inventory of livestock on project farms, as of Nov. 1, 1945, disclosed a total value of more than $67,000,000, and motor vehicles and farm equipment on hand at that time were given a value of nearly $62,500,000.

PUBLIC LANDS

By Fred W. Johnson

Acting Director, Bureau of Land Management,
Department of the Interior[1]

GENERAL

Reconversion from war to peacetime use of the public lands of the United States and their natural resources was the major undertaking of the General Land Office during the 1946 fiscal year. The transition from providing millions of acres of land for troop training, bombing range, tank maneuvering, and other military uses to a program affording postwar opportunities for settlement on public domain areas, particularly in

---

[1] On July 16, 1946, the General Land Office was consolidated with the Grazing Service to become the Bureau of Land Management in the Department of the Interior. The positions of Commissioner and Assistant Commissioner of the General Land Office were abolished and top level authority vested in a Director and Associate Director of the Bureau of Land Management. The Supervisor of Surveys in the General Land Office was also abolished and the responsibilities of that position were vested in the Chief Cadastral Engineer in the Bureau of Land Management. In the District Land Offices the position of Register was abolished, and the designation of Manager was given to the head of each office. Mr. Johnson was named Acting Director of the new Bureau.

Alaska, was well under way at the close of the fiscal period.

Rapid progress also had been made in a similar re-channeling of the tons of minerals, millions of gallons of petroleum products, and millions of board feet of timber and other forest products from military purposes to meet the requirements of a stabilized post-war industrial economy. At the same time satisfactory progress was made in formulating plans to clear away the accumulation of land administration problems which for the past five years have been dammed up behind emergency exigencies of the military program. More than 100,000 cases involving land administration problems of essential, though not of such urgent importance as to demand immediate attention in the midst of the military program, were conservatively estimated to form part of the year's work, while a backlog of responsibility involving the survey or resurvey of more than 100,000,000 acres of public land—projects already authorized but laid aside for immediate war-connected survey tasks—remained on the General Land Office books.

REVENUE PRODUCING AGENCY

For many years the General Land Office has been one of the few agencies of the Federal Government whose operations have resulted in revenues in excess of the cost of administration. In the 1946 fiscal year total receipts from its activities amounted to $13,104,067, and expenditures out of appropriations of only $2,822,662. This surplus of receipts over expenditures represents a ratio of $4.64 in revenue for every dollar spent on the operation of the Office.

REORGANIZATION

Definite steps toward streamlining the work of the General Land Office to meet the new and increasing responsibilities of the post-war era were taken near the close of the fiscal year. In May 1946, President Truman submitted to Congress Reorganization Plan No. 3, which provided for a consolidation of the General Land Office and the Grazing Service in the Department of the Interior into a new Bureau of Land Management. Details of the management of the General Land Office structure and procedures were brought close to completion by the end of the fiscal year, thus paving the way for early effectiveness of the President's program to remove unnecessary duplication in land administration activities and insure maximum efficiency in transaction of the Government's business in the public interest.

Meantime, the establishment of the Bureau of Land Management marked the termination as a separate identity of one of the oldest agencies in the Federal Government. It also opened a new chapter in the history of public land administration in the United States which had its inception with the beginning of the Republic itself, and in all of which, with the exception of its earliest beginning, the General Land Office, first established as a Bureau in the Treasury Department in 1812, had played a direct part.

Chronologically, Federal land administration began with the Ordinance of 1785, largely sponsored by George Washington and Thomas Jefferson, under which the Continental Congress directed that identification of land in the new Republic should be undertaken on the standardized pattern of townships six miles square. Thereafter, disposal of the public lands in accordance with the survey system was carried out by the Treasury.

In 1812 the General Land Office was set up as a Bureau in the Treasury Department for the handling of administrative matters involving the public domain, and when the Interior Department was established in 1849, the General Land Office was transferred to that Department. Throughout the 97 years which followed, the Office, serving in its capacity as official real estate agent of the Government, played a striking role in the advancement of American civilization westward to the Pacific. Making government land available for settlers for the construction of transcontinental railroads, mineral development, and other activities, the volume and rapidity of Office operations at one time led to the coining of the popular phrase, "doing a land office business."

Meantime, the Congress carried forward a systematic enactment of new laws affecting the administration of the Federal public domain until today the body of public land law is made up of more than 5,000 statutes which serve as the basis for adjudicative and administrative procedures.

DEVELOPMENT OF ALASKA

More than 90 per cent of the Territory of Alaska consists of vacant public land whose disposal or the development of its natural resources under the public land laws is a direct responsibility of the General Land Office. Consequently, plans for the future maximum beneficial use of the public domain areas in Alaska formed an important part of the work program of the Office during the 1946 fiscal year.

Stimulated by a public interest in the Territory greater than ever before in recent years, demands for information concerning living conditions and opportunities in Alaska at times literally swamped the facilities of the Office directly engaged in public land administration in the Territory. Thousands of ex-service personnel and other potential travelers over the newly completed Alaska Highway, were furnished with informational material prepared by the General Land Office during the year.

At the same time, definite steps were taken to promote economic development and wider utilization of public domain areas in the Territory. Special field parties of land experts were sent to Alaska during the year to ascertain and evaluate the possibilities for increased agricultural settlement in the Territory; and other measures, looking to maximum land use, were set under way.

Construction of the Alaska Highway, affording an overland route from the United States into the Territory, was an outstanding achievement in connection with the prosecution of the Second World War. When construction of the highway was begun, a strip of land ten miles wide on each side of the road's proposed route was withdrawn from general public use, thus removing approximately 8,300,000 acres of public domain which otherwise would have been susceptible of utilization in the development of the mineral and other natural resources in the Territory. The withdrawals were made with the intention on the part of the Department of the Interior that the areas would be restored to general public use as soon as the need for their use under the military program ceased. Accordingly, arrangements had been brought near completion at the end of the fiscal year for a reduction in the size of the withdrawals and the retention of merely a small right-of-way strip along the highway, thus restoring large areas of the Federal domain to public use.

Similar action was taken shortly after the close of the fiscal year in connection with more than 18,600,000 acres located on the Alaska and Kenai peninsulas originally set aside for the development of possible petroleum supplies for the Armed Forces in the Territory during the war.

SURVEYING THE PUBLIC LANDS

Because no tract of land properly may be set aside for any use until its location and boundaries have been accurately determined and permanently recorded, the Government's cadastral surveys have been the basic foundation in negotiations for the disposal, exchange, withdrawal or other change in the status of the public domain areas since 1786.

Differing from the type of survey work which involves primarily the recording of geographic or historical features of the terrain, cadastral surveying consists of careful measurement of the areas of land on the ground, the recording of such measurements by the placing of monuments or other markers, and the preparation of maps scientifically compiled from notes made by trained engineers at the time of the on-the-ground measurements. First undertaken by the General Land Office when the system of public land surveys decreed by the Continental Congress was transferred to its jurisdiction in 1812, maintenance of a Cadastral Engineering Service has been a continuing responsibility of this Office. During the 1946 fiscal year cadastral activities were carried on in 22 states and the Territory of Alaska, under 62 separate groups. A total of 7,950 miles was surveyed or resurveyed, embracing 1,125,557 acres.

DISTRICT LAND OFFICES

A record of nearly 150 years of uninterrupted service to the public in the administration of the Federal domain was established during the 1946 fiscal year by the network of district land offices maintained under the supervision of the General Land Office. Serving as the first point of contact with the thousands of settlers, who, through past generations sought new hearths and homes on the public lands, original "over the counter" transactions in these offices, in many instances, accompanied the development of the Republic westward to the Pacific.

With the establishment of the first district land office in Ohio in 1800, these outposts of land management spread throughout the West and reached a total of 393 offices at the height of the national public land disposal program. Whenever most of the Federal domain within a land district virtually had passed from the Government into private hands, the offices were closed and the land records transferred to the state authorities.

Today there are twenty-five district land offices located in 13 western states and the Territory of Alaska in which applications for use of the Federal land and its resources may be filed and other negotiations in connection with the public domain may be carried on in direct "over the counter" proceedings based upon more than a century of experience in these transactions.

FORESTRY MANAGEMENT AND OPERATIONS

Post-war requirement for an increased supply of timber from Federal lands was among outstanding problems confronting the Office and its adjudicating and administrative divisions during the year. Detailed plans were formulated for the inauguration of a sustained yield program of forest management on all public lands of the United States under which a safe balance of the volume of tree cutting and tree growing is maintained to insure a perpetual supply of raw material.

At the same time forestry operations on 2,500,000 acres of Federal land encompassed in the Oregon and California Revested Railroad grant areas resulted in the furnishing of more than 345,000,000 board feet of timber, most of which went to meet the nation's construction demands with a resultant revenue of more than $1,420,000 from the sales of these resources in the area. Maximum beneficial use of the supply of forest products on the public lands in Alaska was a problem confronting the Alaska Fire Control Service of the General Land Office during the fiscal year. This responsibility involved both timber management and the prevention and suppression of forest fires on the public domain areas in the Territory on more than 225,000,000 acres of forest, brushland, and other vegetative areas in the Territory. Of the 124,431 acres depleted by fire during the 1946 fiscal year, 38 per cent was caused by lightning, 18 per cent by smokers, and 30 per cent by debris burners and campers, and the remainder by other miscellaneous causes.

MISCELLANEOUS

Through its force of civil, mining and metallurgical engineers, geologists, lawyers, auditors, timber and range specialists and others experienced in land law procedure, the Branch of Field Examination carried forward a substantial program designed to insure its proper observance of the public land laws.

In the past fiscal year settlement made in 348 trespass cases resulted in the recovery of more than $44,000.

The disposal of grazing and mineral lands and certain other types of real property declared to be surplus upon the expiration of its value for military use, was undertaken by the General Land Office during the year. Up to June 30, 1946, 32 declarations of surplus property were placed under the jurisdiction of the Office; 20 of these involved property in continental United States valued at more than $53,600,000, while 12 declarations in Alaska had a total value of more than $23,700,000. The total of all such property placed with the Office for disposal during the fiscal year was more than $77,376,873.

PUBLIC UTILITIES

By H. M. Olmsted
Public Utility Engineer-Accountant

GENERAL

The first year after the end of the fighting in the Second World War confronted the public utility industries with the changing needs and conditions of an unsettled peacetime economy. Demands for service continued high, but for widely different purposes and from shifting sources. Restrictions on supply of equipment and construction materials presented difficulties but were eased during the course of the year. Higher costs of materials and labor developed, together with increased demands of various sorts by labor unions, culminating in strikes and cessation or reduction of operations in some instances.

Although wartime controls had been mostly removed by the end of 1945, somewhat similar restrictions were instituted in 1946 during the two nationwide coal strikes. In May, the Civilian Production Administration issued an order, applicable to the eastern half of the country, making mandatory the interchange of electric power and the maximum use of methods of power production other than by coal. The Federal Power Commission stimulated interconnections by declaring that those of a temporary nature, for the emergency, would not affect the status of electric utilities under the Federal Power Act.

In November and early December, when the coal miners were again on strike, the CPA once more directed the interchange of electric power and required limited curtailment of service by electric utilities in the East, and the FPC urged electric systems to utilize water power as much as possible and again waived jurisdiction during the coal crisis over companies making interconnections to save coal. The Solid Fuels Administration increased restrictions on distribution of existing coal stocks.

ELECTRIC LIGHT AND POWER

The coal shortage imperiled gas manufacturing companies even more than electric utilities. Demand for electrical energy, which took a precipitous drop after V-J Day in August, 1945 (much below 1943 and 1944), climbed rapidly after the middle of 1946, exceeded the corresponding periods of all the preceding three years by mid-September, and in November began a series of all-time records. Although interrupted in early December by the coal strike it reached a peak of 4,940,453,000 kilowatt-hours in the week ended Dec. 21. This was 7 per cent greater than the high point for any previous year, which was 4,616,975,000 kwh in the week ended Dec. 23, 1944.

At the year's end the Edison Electric Institute estimated that the total 1946 production of energy by all electric utilities, both privately and publicly owned, was substantially the same as in 1945, or about 222,500,000,-

000 kwh. Steam plants were credited with 143,000,000,000 kwh, an increase of 2,500,000,000 over 1945; hydro plants with 77,500,000,000 kwh, a decline of 2,500,000,000, and internal combustion engines produced about 2,000,000,000, as in 1945. Total sales were placed at about 191,000,000,000 kwh, a decline of about 1.3 per cent below 193,558,000,000, in 1945, but the year's revenues were estimated to have increased 3 per cent to $3,450,000,000, this rise being attributed to replacement of much wholesale industrial use by higher-paying commercial and residential service.

Nearly 2,000,000 new customers were reported to have been added in 1946, the majority being in rural areas. The total number of electrified farms was put at 3,400,000, an increase of over 500,000; the new total was said to comprise 63 per cent of all occupied farms.

The average residential consumption of electric energy attained a new high of 1,330 kwh per annum, according to the EEI, this being an increase of about 100 kwh over 1945, accompanied by a drop in the average cost per kwh to the residential consumer. New records of consumption were set for all classes of customers except industrial, which, however, held up remarkably in view of the cessation of war production.

Construction in the amount of $800,000,000 was reported during the year, largely for improving distribution lines and other facilities. Power plant construction was delayed considerably by equipment shortages, partly owing to strikes in metal production and electrical manufacturing industries. About 150,000 kilowatts of generating capacity were installed in the year, although 1,400,000 kw were reported to have been scheduled. It was announced that the electric companies plan to add about 8,500,000 kw of generating capacity in the next three years.

FEDERAL POWER COMMISSION

Relieved of some of its wartime functions in regulation of power in the interests of war production, the Federal Power Commission again concentrated on peacetime regulation of interstate electric and natural gas companies, as to construction, rates, service, accounting, etc. The extent of its jurisdiction continued to be a subject of some dispute on the part of state regulatory commissions and their national organization, the National Association of Railroad and Utilities Commissioners. On Nov. 4, in the Safe Harbor Water Power Corporation case, the FPC took the position that it has jurisdiction over rates that would otherwise be determined by agreement of state commissions, where inaction of the latter as to high rates indicates inability to agree. The NARUC had opposed the claim of the FPC to such jurisdiction. The Safe Harbor company was directed to reduce rates to a level calculated to yield a five per cent return on net investment (the depreciation reserve being deducted).

SECURITIES AND EXCHANGE COMMISSION

On April 1, 1946, the United States Supreme Court in the case of *North American Co.* vs. *Securities and Exchange Commission* upheld the constitutionality of the Holding Company Act as to its requirement of integrated systems and divestment of other holdings (Section 11 [b] [1]) and, without passing directly on the provision for dissolution of subsidiary holding companies (Section 11 [b] [2]), stated that it applies to holding companies engaged in interstate commerce. The North American Co., which at one time headed a system of 80 companies doing business in 17 states, was ordered by the SEC in 1942 to divest itself of all properties except the Union Electric Co. of Missouri, serving St. Louis and vicinity. The SEC was sustained by the Circuit Court of Appeals in 1943, but decision of the company's appeal to the Supreme Court had been delayed by lack of a quorum; some of the justices were unable to participate because of prior connection with the case in various official capacities. The final decision was 6 to 0.

In November, by another 6-0 verdict, the Court sustained the SEC's order directing the dissolution of the American Power and Light Co. and the Electric Power and Light Co., subholding companies of the Electric Bond & Share Co. system. Thus Section 11 [b] [2] of the Holding Company Act was upheld.

Despite the delay in the ultimate decision on the constitutionality of these provisions a great amount of geographical integration and corporate simplification of holding-company systems has taken place in recent years, with varying degrees of cooperation between the SEC and the companies; and according to Chairman James J. Caffrey, at the year's end, the integration and simplification program is proceeding toward rapid accomplishment. During the year the SEC approved nine plans submitted by public utility holding companies relating to the revamping of their systems.

TENNESSEE VALLEY AUTHORITY

In December, the Tennessee Valley Authority reported that, in the fiscal year ended June 30, 1946, it received $16,150,000 for 3,500,000,000 kwh of electrical energy sold to 92 municipalities and 46 cooperatives in the seven southern states served by its lines. This energy went to some 669,000 consumers, who paid $43,500,000, yielding net income of $8,200,000 to the distributing agencies after operating expenses, depreciation, interest, and also taxes or tax equivalents amounting to $2,179,000 paid to state and local governments. The number of ultimate consumers increased by 88,000 during the year, including 30,000 new rural consumers; 31 of the distributing agencies were reported to have reduced their rates by $850,000 per annum.

Residential use per customer averaged 1,903 kwh at an average price of 1.78 cents, compared to a nationwide residential average of about 3.3 cents per kwh. Total energy produced and sold, including supply for the Oak Ridge atomic energy plant, and other large-scale power users, which suffered a substantial drop after V-J Day, was exceeding wartime peaks by the latter part of 1946, being at the rate of 12,000,000,000 of kwh per annum. Total power revenues for the fiscal year, however, ($35,265,000) were about 10 per cent less than in the previous year.

Discussion and controversy over the proposal for a Missouri Valley Authority and, to a lesser extent, a Columbia Valley Authority, continued during 1946 without substantial progress toward those objectives being evident. Drastic slashes in funds for the Bonneville Power Administration, in Oregon and Washington, and various other Federal power undertakings, were made, followed by substantial restorations. The new Congress is expected to restrict public power development still more.

ATOMIC ENERGY

The engineering and economic possibilities of nuclear or atomic energy for electric power production were explored with increasing interest during 1946. Preparations for one so-called atomic power plant were under way at Oak Ridge, Tenn., the location of the main nuclear fission laboratories and other installations used in the war for production of atomic bombs. It was emphasized, however, that this plant is to be purely for research and experimental use; that it is merely at the design stage; that many problems must be solved before it can be constructed and operated; and that operation is not likely during 1947. The fundamental basis of the plant is the uranium "pile," the use of which for power purposes is a vastly different matter than the production of bombs.

In November it was announced that a second uranium pile for power purposes is planned for the Knolls Atomic Power Laboratory, to be built and operated for the Federal Government by the General Electric Co. at Schenectady, N. Y.

Estimates of atomic power plant costs were submitted to the United Nations by technicians of Oak Ridge and elsewhere, indicating that an atomic power plant of 75,000-kilowatt capacity could be built for $25,000,000, or about 2½ times the cost of a coal-fired steam-electric plant of that capacity, and that total production costs could be 8 mills per kwh, compared to 6.5 mills; however, these were on the basis, among other assumptions, of 3 per cent interest and 100 per cent load factor, which latter is far from a usual condition.

In October and November the *Electrical World* published a report prepared as a project of the Carnegie Endowment Committee on Atomic Energy, presenting further data and estimates concerning atomic power production, with comparison to coal-using methods. It purported to show an economic advantage for atomic power, assuming uranium at $10 a pound, over coal at $6 a ton, and with operation averaging 50 per cent of capacity. However, all such estimates are highly speculative, particularly as no atomic power plant has been finally designed, much less built, and many assumptions are used that may be wide of the mark, proof as to which will hardly be available for years to come.

Aside from availability and cost of uranium (or any possible substitute), which, together with its primary utilization, will be kept strictly in governmental control, and problems of harnessing its inherent energy for industrial power, there is the need not only of protection of the working force from the dangers of operation but also of the disposal of radioactive wastes so that the public will not be menaced.

Present research in atomic power is stated to be directed toward its correlation with existing power equipment and techniques. The chief items subject to displacement would be furnaces and boilers; turbines would not be affected so much, and generators, transformers, and transmission equipment would presumably be unaffected. Any effect on hydroelectric power would be similar in nature to that of steam power today. Thus atomic power does not as yet seem likely to produce as revolutionary changes in the electric power industry as might be popularly assumed.

GAS

Customers of gas utilities at the end of 1946 were reported by the American Gas Association at a new high level of 20,835,000, representing an increase of 2.7 per cent during the year. The number receiving natural gas was given as 9,401,000; those receiving manufactured gas, 8,793,000; and those served with mixed gas, 2,461,000. It was estimated that a further number of 3,000,000 consumers beyond the reach of gas mains used liquefied petroleum gas.

The revenues of the gas industry in 1946 were placed at $1,205,992,000, or about 4 per cent more than in 1945; the increase was primarily in residential and commercial use, industrial consumption remaining at about the previous year's level. Revenue from natural gas was stated as over $705,000,000, or 3.4 per cent over 1945; manufactured gas revenue was about $392,000,000, an increase of 5.6 per cent; and mixed gas brought in $109,000,000, up about 2.4 per cent.

Cubic feet of natural gas sold were given as 2,192,778,000,000, slightly more than in 1945; residential and commercial consumption increased materially. Manufactured gas sold amounted to some 412,053,000,000 cubic feet, an increase of 4.2 per cent; mixed gas was sold to the extent of 145,832,000,000 cubic feet, or 3.7 per cent over 1945. Residential and commercial sales of manufactured and mixed gas were reported to have increased 8 per cent. The number of homes heated by gas was stated to have increased 15 per cent.

The gas industry has continued an intensive program of research and promotion under the auspices of the AGA. Separate groups have concentrated on residential development and on commercial and industrial research, looking to new applications, apparatus and improvements.

Natural gas is now supplied in 33 states, by means of some 220,000 miles of trunk lines and mains. On Dec. 16, the Federal Power Commission announced that in the preceding 14 months it had authorized natural gas pipeline facilities in an aggregate amount of $193,576,000 and that 71 large cities and many smaller communities are thereby benefited; the additional gas thus made available was placed at more than 1,000,000,000 cubic feet a day. One line included was from Texas to California, a distance of 1,200 miles, with a capacity of 305,000,000 cubic feet a day; its cost was given as about $70,000,000.

Controversy over disposal and use of the government's "Big Inch" and "Little Big Inch" pipelines, built during the war to bring oil to the eastern seaboard, came to a head in December when the bituminous coal mines were on strike. Temporary use of the two lines for transmission of natural gas was arranged for by lease, with the distinct possibility that the use for that purpose would be continued.

The FPC concluded in July its hearings in the investigation of the natural gas industry that started in 1945. Its report thereon was expected by the spring of 1947.

TELEPHONE AND TELEGRAPH

The American Telephone & Telegraph Co. announced late in 1946 that in the first ten months of the year the Bell Telephone System had installed 5,000,000 telephones, representing a net increase of over 2,750,000 and bringing the total in service to 25,200,000 in October. Including 6,000 independent telephone companies the grand total for the United States was given as over 30,000,000 telephones. The Bell System reported 2,000,000 applications for service at the end of the year, and anticipated making substantial progress in taking care of them. At the end of the year the Civilian Production Administration dropped its restrictions on telephone installations, but because of the tremendous unfilled demand and the shortage of instruments and of central office and cable facilities the telephone companies expected to continue the system of preferences that had been in effect, whereby physicians, schools, essential industries, war veterans, etc., had various degrees of priority.

The A. T. & T. Co. asserted that more technological developments were introduced in 1946 than in any other year, including mobile telephone service, rural telephone service over electric power lines, radio telephone service for remote farms and ranches and inter-city transmission of regular television programs over coaxial cables. This company sold more than $560,000,000 of debentures and common stock in 1946 in its financial program for expansion.

The Western Union Telegraph Co., having a virtual monopoly in the telegraph industry but subject to effective competition of the telephone and the air mail, was granted a 10 per cent rate increase by the Federal Communications Commission and by most state commissions, and in October petitioned for a further increase. The company and the staff of the FCC have been carrying on a comprehensive investigation to develop a simplified and non-discriminatory rate structure.

Construction of a radio beam network for the simultaneous transmission of large numbers of telegraph messages has been considerably advanced.

TRANSIT

Local transportation continued a course of gradual replacement of worn-out equipment, made difficult by shortage of new vehicles and the pent-up demand. Some further substitution of buses for street-railway cars occurred, particularly in New York City, and there has been a distinct trend toward greater general use of trolley-buses. Traffic generally held up well despite loss of wartime industrial riding; in some localities prior records were equaled or exceeded.

The transition of the Chicago privately owned transit systems—surface and elevated—to a comprehensive municipal system, including subways, was nearly consummated in 1946. With Chicago there are 34 cities of all sizes in the United States owning some facilities for public transportation.

PITTSBURGH ELECTRIC UTILITY STRIKE

Pittsburgh, Pa., was the scene of the first large-scale electric utility strike affecting a metropolitan city. A preliminary strike took place on Feb. 12, 1946, lasting about 19 hours, on the part of the Independent Association of Duquesne Light Co. Employees, which demanded an immediate 20 per cent wage increase, with an additional 15 per cent to be arbitrated; the company offered 7½ per cent. The union was reported to have about 3,200 members in that company and its affiliates. When the strike occurred limited service was maintained by supervisory employees, but streetcar lines stopped and many coal mines closed. Steel mills were already strikebound. A three-man mediation board began hearings after the strike was called off. In April the union accepted an arbitration award of a general wage increase of 18 cents an hour, but indicated it would seek more on July 1 when negotiations could be resumed.

After long and unsuccessful negotiation another strike was announced to start Sept. 10. Just before its scheduled beginning, the city obtained a preliminary restraining order against disruption of service. At first the head of the union agreed to arbitrate, and a hearing on the restraining order was postponed to Sept. 24; but he changed his position, attacked the court's order, and at the hearing, after refusing to attempt to call off the second strike, which began that day, was held in contempt of court and sentenced to a year in jail. Thereupon Pittsburgh organized labor in general, which had not been especially sympathetic, indicated its support of the strike. On Sept. 26 the city sought and obtained dissolution of the injunction that had supplanted the restraining order, and the union president was freed. The strike continued for 27 days, and on Oct. 20 the union voted to accept arbitration. Although the strike had crippling effects it was not as disastrous as had been feared; a group of supervisory employees kept the electric system functioning at from 35 to 50 per cent of normal, and as much power as was generated at the company's plants was available from other utility and industrial plants in the area. It was estimated by business sources that 125,000 persons in offices, stores, and industry were made idle by the strike, and that loss of business and wages in the area came to $300,000,000. Street railways did not run until Oct. 14, when the AFL union operators decided to resume work despite picket lines.

GAS STRIKE IN NEW JERSEY

Potentially even more disastrous than electric strikes are tie-ups in the gas production and distribution industry, where continuity of supply is important from the standpoint of customers' safety. The Public Service Electric & Gas Co., in New Jersey, had considerable trouble in its gas department. In April a strike of 1,200 workers in nine gas plants was threatened and the state government took the plants over for five days under a statute enacted two weeks previously. They were returned to company control on April 9, when six independent unions ratified a wage increase of about 13 per cent, 20 per cent having been asked for. In June the Paterson plant was taken over during a brief strike. On Dec. 24 a strike of AFL workers began in Jersey City; the state took over and stopped gas distribution to industries, but the strike ended on Dec. 26, with a 30-cent hourly wage increase demand to be mediated. On the same day, however, 400 AFL production employees at the Harrison plant, largest in the state, struck for a 30-cent increase. The state did not seize the plant until Dec. 28, when pickets blocked passage of esential coke into the plant. The coke was admitted and mediation was ordered, but the strike was still in effect at the year's end. Supervisory employees kept the plant in operation.

MILWAUKEE STRIKE

A four-day strike of CIO gas workers in Milwaukee, which ended

July 27, caused actual stoppage of gas service to a great many consumers, other than hospitals. The company was able to keep its mains full with gas purchased from the Milwaukee Solvay Coke Co. but because of reduced pressure consumers were warned to turn off the gas at the meters to avoid danger of explosions. Fortunately when normal service was restored only one serious explosion occurred.

LOCAL TRANSPORTATION STRIKES

Several extensive strikes took place in the local transportation field. Detroit had a week's strike in April on the city-owned street railway and bus system. The men asked an 18-cent increase and the city offered 15 cents which was finally accepted, with arbitration of another point. Other cities hit by transportation strikes included Los Angeles, Philadelphia, San Francisco, Columbus (Ohio), Atlanta, Oklahoma City, Lancaster, Saginaw, and parts of New York City. In the latter metropolis the Transport Workers Union (CIO) threatened a strike on the city-owned rapid-transit system for higher wages and recognition as sole bargaining agency on the system. The latter claim was withdrawn after being ruled unlawful. Other questions went to arbitration, resulting in a substantial wage increase.

TELEGRAPH AND TELEPHONE STRIKES

A five-week strike of Western Union telegraph workers in New York City ended on Feb. 10, 1946 with an agreement to arbitrate.

Brief strikes of Bell telephone workers occurred in various places, and the National Federation of Telephone Workers has set April 7, 1947 for a national strike if satisfactory contracts have not been negotiated by then.

MEASURES TAKEN AGAINST UTILITY STRIKES

Three unusual devices for dealing with public utility strikes appeared during the year. The first was the passage in New Jersey of the state utility labor relations law, giving the state the right to seize utility plants threatened by strikes. It was invoked several times, as previously noted. At the year's end Walter E. Edge, outgoing Governor, who had advocated the law, urged that better means of enforcement be added. The second was the action of Governor William M. Tuck of Virginia in drafting AFL employees of the Virginia Electric & Power Co., who threatened to strike, into the state militia and furloughing them to their jobs; this order was promptly rescinded when the company and the men agreed to arbitrate a question of retroactive pay increases. The third was the short-lived injunction used in Pittsburgh, as described before.

A new organization of utility employees was formed in April when a constitutional convention of the Utility Workers Union of America (CIO) was held; it was reported to represent 50,000 employees of electric, steam, gas and water plants, largely in New York City.

On Dec. 9, at the call of the Department of Labor, a meeting of labor and management representatives was held in Washington to discuss methods of maintaining industrial peace in the utility field, primarily by voluntary means.

CONCLUSION

Public utilities in general came through 1946 very successfully, both financially and from the standpoint of rendering expanded service, despite handicaps as to shortages of some types of equipment and occasional difficulties with more militant organized labor. With economic activity generally at a high level at the end of the year and with demands still largely unsatisfied for electric and gas appliances, telephones, etc. and for utility service to new areas and customers, public utilities as a whole seem likely, barring an economic depression, to experience a further period of expansion in 1947 and beyond.

WATER SUPPLY

By Clinton L. Bogert
Consulting Engineer, New York

GENERAL

The year 1946 will probably go down in history as marked by a lack of construction activities, but as most productive of studies and plans in the blue print stage. It failed to produce the promises made by proponents of water works projects in 1945. A canvas of state authorities showed that the new works scheduled in Water Works Engineering in 1945 were still in the blue print stage in 1946. While other municipalities held off from undertaking construction, the Board of Water Supply of New York City resumed actual work on the much needed Merriman Dam. The 41-mile aqueduct for Salt Lake City was completed in March.

CONSTRUCTION FACTORS AND COSTS

The hesitancy of manufacturers to supply new equipment or parts at the prices prescribed by the Office of Price Administration proved a great handicap to the maintenance departments of all municipalities and water companies. Everywhere difficulty was encountered in securing open bids on municipal contracts where early delivery was stipulated. In June, W. W. Brush wrote: "At present water works executives realize that the housing construction program that is being developed by the Federal Government will prevent much water works construction outside of the vast volume needed to provide water supply for 2,700,000 homes in the next 2 years, which is the housing goal."

In a study presented to the annual meeting of the American Society of Civil Engineers in January, Louis R. Howson, a consulting engineer of Chicago, based on the trends of construction costs from 1860 to 1946 concludes that future water works construction costs will be 50 per cent higher than in 1939; and based thereon Howson concludes that there should be an increase of about 20 per cent in the prices charged for water. In February 1946 construction costs were 135.7 per cent above the 1939 level, and 153.5 per cent in August; in November they had moved only to 153.9 per cent which may indicate that the peak had been reached in the Fall.

MERRIMAN DAM

Payment for work on the $16,000,000 contract, which was awarded July 25, 1939, amounted to about $7,000,000, when, owing to war conditions, the contract was cancelled in August, 1944. New bids to complete the work were received Feb. 26, 1946; the contract was awarded at $14,300,800. The chief items of work are rolled embankment, concrete and cement; the 1946 unit price bids were above the 1939 bids by 100%, 44%, and 70%, respectively. A supplementary agreement with the S. A. Healy Company, which was awarded the work under 55 items, provides that "if the total actual cost to the contractor proves to be less than 85 per cent of the bid price, the contractor agrees to let the city keep 80 per cent of the difference, and the contractor receives the other 20 per cent."

WATER SUPPLY SOURCES

From Jan. 1 through April 22, only 7.35 inches of rainfall were recorded in New York City, the least rainfall for that period since recording started in 1871. The nearest comparable period was 1927 when the record showed 9.12 inches. Normal rainfall would be 13.47 inches for this period of 112 days. Washington, D. C. also experienced about half the amount of normal rainfall, with only 6.63 inches.

QUABBIN RESERVOIR

Quabbin Reservoir, which is the main storage reservoir of the Metropolitan District Water Commission furnishing water to the majority of the people in the Boston Metropolitan Area and the world's largest reservoir for the water supply of a group of municipalities was filled to the crest of the masonry spillway of Winsor Dam on May 30, 1946. Filling of this 400,000,000,000-gallon reservoir began on Aug. 7, 1939. The area of Swift River watershed directly tributary to Quabbin Reservoir is 186 square miles.

WATERSHED FORESTATION

N. C. Brown of the New York State College of Forestry contends that wood in any form is likely to be valuable in the future, especially when grown near communities. He estimates that several million acres of watershed are now planted to forests, which contain up to 100,000,000 trees; these serve not only to retard runoff, but to provide timber crops for the future. Seattle, Wash. has 68,000 acres of forests; Newark, N. J. 36,000 acres. Other examples of forests on watersheds may be found at Essex Junction and Rutland, Vt.; Manchester, N. H.; East Orange, Atlantic City, and Jersey City, N. J.; Salt Lake City, Utah; New Haven and Hartford, Conn.; York, Scranton, Wilkes-Barre, and Reading, Pa.; Glens Falls, Syracuse, Little Falls, Gloversville, Troy, Rochester, N. Y.; and Westfield, Mass. The type of trees should be varied to conform to soil and climatic conditions.

RECESSION OF WATER TABLE IN WISCONSIN

A research committee has been formed at the University of Wisconsin to locate the existing water tables and determine whether certain areas are being overpumped, and the possibilities of recharge. The committee expects that there has been an overdraft from war industries and air conditioning.

PROPOSED NEW SOURCE FOR PHILADELPHIA

The board of five consultants appointed in 1945 to assist the 20-man water commission recommended (1) abandonment of the Schuylkill as a source, (2) construction of a 98,000,000,000-gallon retention reservoir on the Delaware River about 13 miles above the Delaware Water Gap, (3) an intake on the Delaware River at Yardley, above Trenton, and the construction of a tunnel to a proposed pumping station at Neshaminy Creek, whence water would be pumped to a proposed regulating reservoir at Warrington, or flow by gravity through a new tunnel to the Torresdale filters.

POLLUTION CONTROL

H. R. 6024, known as the Mansfield Bill, and on which finally the House of Representatives failed to take action, contained provisions for pollution control which were objectionable to water-supply engineers. At the St. Louis convention in May of the American Water Works Association. Dr. Abel Wolman of Johns Hopkins University estimated that between $2,000,000,000 and $3,000,000,000 will be required to correct stream pollution. On a recent survey of pollution of the Ohio River, $700,000 was expended, but it was a thorough survey. There is a growing apprehension by industry that "the cost of treatment of wastes ought to be considered a fundamental part of the cost of production." The New York legislature in 1946 authorized an interstate committee to determine the extent of pollution of the state's waters and recommend a program of corrective action. This committee held meetings in Syracuse, Utica, and Buffalo.

DRINKING WATER STANDARDS

The United States Public Health Service, under its authority over interstate health matters, on Feb. 6, 1946 promulgated new standards superseding those of 1942. The new standards differ from the old in amplifying Sanitary Defect to include a condition which "prevents satisfactory purification of the water supply," or allows "dual supplies, by-passes, cross-connections, interconnection and back-flow connections." Also the 1946 standards impose on the health departments of the states the obligation of being the reporting agency to advise the United States Public Health Service as to the compliance with these standards of the various water systems in the continental United States. This placed on the states a burden of inspection of premises of consumers which they were not prepared to assume, and a Conference of State Sanitary Engineers was scheduled for Nov. 11 at Cleveland.

PUBLIC VS. PRIVATE OWNERSHIP OF WATER WORKS

W. W. Brush, editor of *Water Works Engineering,* in the issue of Feb. 20, 1946 brings out the following items which are not often given due consideration:

"To make a fair comparison between the cost of the water system to the consumers as operated under private ownership, the taxes paid by the private company should be given in detail and the loss in taxes be shown that would result with municipal ownership. This loss in taxes should be set up at the different levels of government such as local, state, and federal. It may be difficult to determine effect on the local community in the loss in taxes at the state and federal level, but this item should be mentioned.

"Also, in the comparison, should be included as part of the municipal cost, all municipal services that are rendered free, such as occupancy of buildings, legal advice and many other items.

"No one should object to a municipality attempting to purchase and operate the local water system, but in the comparison of the two plans, the private water company is entitled to a fair factual picture of relative costs being given to the citizens."

WATER RATES

On Jan. 29, 1946, the Connecticut Supreme Court of Errors ruled that an increased schedule of rates charged by the New Haven Water Company since Nov. 1, 1939 was legal and that the company had no obligation to make any refunds to customers. A refund of $900,000 would have been involved.

In Massachusetts, legislation was passed providing that beginning in 1946 the price of water in the Metropolitan District of Boston should be fixed at $40 per 1,000,000 gallons regardless of the amount taken, and irrespective of the valuation of each community.

SUPERINTENDENTS LICENSED IN NEW JERSEY

The 1946 legislature amended the public health laws pertaining to public water supplies so as to strengthen the State Department of Health in Court action like that against the City of Hoboken in 1942. "The law provides for the automatic issuance of a license to the person in charge of the plant or system, at the time of the passage of the act, to operate the plant or system in which he was engaged. All other applicants are required to qualify and to be examined by the Department before being issued a license."

COMPENSATION OF WATER WORKS EMPLOYEES

For the 14 months ended Dec. 1, 1946, the City Council of Cincinnati, O., where the workers in the city water department had threatened to strike, granted 4,500 employees a 25 per cent pay increase, at the total cost to the city of $635,000.

EMPLOYEE PROFIT-SHARING PLAN

In January the Public Service Commission of Wisconsin declared legal the profit-sharing plan of the Waukesha Water Utility. The employees will share in 4% of the net income, but no employee shall receive more than $200 per year for the years 1944 and 1945. Employees who have put in six months in any year are eligible to the benefits, which shall be considered as part of the wages or salary.

RETIREMENT PLAN, DES MOINES

Under 1945 legislation of the state of Iowa the Board of Water Trustees of the city of Des Moines were enabled to make a Declaration of Trust, covering a pension and annuity retirement system. It covers full-time employees of at least one year. Employees contribute 3 per cent of earnings, and the Trustees make up the difference required to assure each contributing employee the retirement annuities, death benefits, and separation benefits stipulated in the Declaration of Trust.

SEGREGATION OF UTILITY

American Water Works and Electric Co., the largest operator of privately owned public water supply companies in the United States, announced that it would segregate these enterprises into a separate company, completely disassociated from its electric and other utility operations. The segregation is being made in accordance with plans recently filed with the Securities and Exchange Commission, by which the company is conforming its holding company system to the requirements of Section 11 of the Public Utility Holding Company Act of 1935.

ACTIVATED SILICA IN WATER TREATMENT

The merits of activated silica were presented by Harold R. Ray of the Philadelphia Quartz Co. in a series of articles in *Water and Sewage Works.* It produces more effective coagulation in both warm and cold water periods; increases floc size and densifies floc; reduces the necessary alum and alkali consumption; broadens the effective pH range of treatment; increases the length of filter runs; buffers sudden chemical changes of raw water characteristics; reduces the raw water color by better than 90 per cent; improves filtered water quality generally and reduces turbidity; prevents "after precipitation" of alum during cold water periods when alum reacts slowly; and decreases dissolved silica.

ELECTRONIC PRINCIPLE OF WATER PURIFICATION

Fred E. Stuart in *Journal of the New England Water Works Association,* Sept. 1946, advocates this method for alkaline or acid solutions, containing concentrations of color-bearing materials; they may be coagulated under conditions requiring materially less control than the present application of filter alum and hydrated lime for the resulting formation of hydrous aluminum floc for color removal.

CORROSION CONTROL

Much work has been done on the use of polyphosphates and silicates which are capable of depositing a relatively impervious film on the surface of a pipe. Basic research is needed to coordinate and clarify conflicting empirical results. The new organic carbons containing silica and carbon, and known as silicons, may prove effective in corrosion control. (Rolf Eliassen, *J. A.W.W.A.,* Oct. 16, 1946). Powell, Bacon and Lill (*J. A.W.W.A.,* July 1946, page 808) hold that "corrosion, which is a result of contact of water with ferrous and nonferrous materials, would be practically non-existent if the waters were free of oxygen and other corrosive gases, or if some steps were taken to protect the metal surfaces from contact with these gases."

"Small doses of polyphosphates are effective in controlling scale and inhibiting corrosion which may result when deposition of scale is prevented. Properly controlled lime, high doses of polyphosphates or sodium silicate will greatly mitigate corrosion and prolong the life of ferrous metals exposed to the action of soft corrosive water."

Experiments at Pasadena with lime and phosphate proved so promising that a permanent plant has been constructed. About 4 p.p.m. lime was required to neutralize the CO_2 and raise the pH. To reduce corrosion further and hold the lime in solution 2 p.p.m. of phosphate was added.

At the Naval Station in California, red water troubles were found to be due to the anaerobic corrosion of a steel main. Corrosion of a ferrous metal is possible in strongly acid solutions or when a chemical is present in the solution which can react at the cathode surface. Nitrate is an example of such a chemical. Raising the pH from 6.4 to 8 completely arrested the corrosion both in the presence and absence of chlorine.

FLUORINE AND TEETH DECAY

Henry Klein, Senior Dental Officer, United States Public Health Service, presented (*Public Health Reports*) confirmatory evidence on the inhibitive effect of fluorine in a public water supply on the incidence of dental caries, or tooth decay.

MODE OF ACTION OF CHLORINE

The Green and Stumpf Laboratory Department of Medicine, College of Physicians & Surgeons of Columbia University, at the request of the Office of the Quartermaster General, made a study between May 1944 and December 1945 of the fundamental biochemistry of water disinfection.

"Employing the technics of physiological chemistry to determine the manner in which chlorine exercises its bactericidal action, the authors show that the trace level at which chlorine is effective implies that it must inhibit a key enzymatic process. This process is determined to be the oxidation of glucose by the bacterial cell; once the power of glucose oxidation is lost, the bacterial cells die—the suspension becomes sterile. The authors further show that the reaction is not reversible; that is, that bacteria once inactivated by chlorine cannot be reactivated. They show that another halogen—iodine—has the same power, but requires higher concentrations for equivalent bacterial kills."

CHLORINE DIOXIDE FOR TASTES AND ODORS

At Lawrence, Kansas, it was found that ammonia-chlorine, activated carbon, free residual chlorination, or their combination, were effective most of the time, but under difficult circumstances (excessive concentrations of microscopic organisms, or unusual conditions created by surface drainage) successful elimination of tastes and odors have resulted from prechlorination for disinfection, followed by treatment with chlorine dioxide to oxidize or destroy the organic material in algae or phenolic pollution. For the most economical use of chlorine dioxide, apply it to a water of lowered pH after the water has been exposed to a small dose of activated carbon for six or more hours. A taste-free water is produced. At Beaver Falls, Pa., experiences indicate that it eliminates certain tastes, but "that in some cases it merely changes the character of the tastes and odors without eliminating them completely."

INACTIVATION OF POLIOMYELITIS VIRUS BY CHLORINE

Investigations by the Division of Virology and Laboratory of Biophysics of the Michigan Department of Health, based on the possibility that polyomyelitis might be a water-borne disease, indicate that no active virus was detected after 30 minutes contact with water containing a chlorine residual.

FORMULAS FOR PIPE FLOW

In a paper presented at the 1946 convention of the American Water Works Association, Julian Hinds compares various formulas (Chezy, Kutter, Darcy, Manning, Williams-Hazen, Scobey) and concludes that from the point of view of the water works engineer:

"1. The older pipe flow formulas are imperfect and are limited in scope, but uncertainties involved in their use are not markedly greater than other uncertainties inherent in the design of water supply systems.

"2. Of the newer formulas, that for laminar flow may be accepted as theoretically exact and that for smooth pipe as accurate beyond practical needs. These formulas are of little use in the design of water systems.

"3. The Colebrook formula for turbulent flow in rough pipes is ideal in its conception, but it requires further substantiation, particularly in the transition zone, and the development of a definite scale of values for its roughness factor, *k*."

FAILURES OF DOMESTIC HOT-WATER TANKS

Investigations, by Hoover at Columbus and Bialosky at Chicago, on galvanized tanks were reported to the 1946 convention of the American Water Works Association. Hoover experimented over a 10-year period with water-conditioning as well as other metals than galvanized iron. Experiences at army camps indicate that where water is heated to 180°F., overheating is "probably the greatest contributing cause to premature failure of hot water tanks." Galvanizing does not protect the steel when the alkalinity of the water is low (20 to 30 p.p.m.). Cement or stone-lined tanks showed excellent results; resinous (plastic) linings are still in the experimental stage. Cathodic protection proved effective. Bialosky found the preparation of the steel surface prior to galvanizing an important life factor; as to the water supply, he found importance in the quality of water, rate of flow through the tank, pressure variations, and particularly the temperature of the water and the rate of application of the heat. Softening of water accelerates tank failures; hard waters form a protective scale of calcium carbonate.

NEW DEVICES AND MATERIALS

A valve actuator, designed to operate valves hydraulically, through a reversible electric motor of small horse power which drives an oil pump in either direction as required, has been installed in a power plant of the Los Angeles Department of Water and Power. (S. B. Morris, Jr. *J. Am. W. W. A.*, Sept. 1946.)

"There are being developed many interesting new synthetic thermosetting and thermoplastic materials which appear to have very good bond to metal, good resistance to abrasion and excellent resistance to conditions of exposure common in water works operations." (See also Smith on Plastic Coatings in *J. N. E. W. W. A.*, June, 1946.)

STREET AND HIGHWAY TRAFFIC

By Burton W. Marsh

Director, Traffic Engineering and Safety Department,
American Automobile Association

GENERAL

The year 1946 produced increasing evidence that we, as a people, have to a serious degree failed to realize the importance of highway transportation or to appreciate the serious results of failure to deal with it effectively. Highway transportation simply has not been placed at anything like the importance level which it now warrants. This undervaluation is most apparent in cities where despite serious and in some places critical traffic and parking conditions, there generally has not been appropriate reorganization for effective administration of the highway transportation function. There were numerous significant developments during 1946 which give hope for better progress. It can not be said, however, that these justify assurance of adequately staffed, efficient management of highway transportation in the near future—badly as this is needed.

DESIGNATION OF NATIONAL SYSTEM OF INTERSTATE HIGHWAYS

While the overall highway transportation picture in 1946 was not good, there were a number of constructive developments. The Federal Aid Highway Act of 1944 provided in Section 7 that there should "be designated . . . a National System of Interstate

Highways not exceeding forty thousand miles in total extent so located as to connect by routes as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and to connect at suitable border points with routes of continental importance in the Dominion of Canada and the Republic of Mexico." The act provided that the routes should be selected by joint action of the state highway departments with the U. S. Public Roads Administration having the responsibility of coordination. During 1946 this task of designating the nation's most important road network was virtually completed. In fact, only two or three features remained to be worked out at the end of the year. This network while constituting but one per cent of the nation's road mileage, will carry some 20 per cent of the total vehicle-miles of traffic.

NEW STANDARDS FOR INTERSTATE HIGHWAY SYSTEM

While not as high as recommended in the report of the committee which developed the justification and basic plan for the Interstate Highway System, the new set of high standards for this system adopted by the American Association of State Highway Officials Aug. 1, 1945, are ready for use as the development of this top priority network gets under way. Standards are varied to meet differing traffic needs.

INTERSTATE HIGHWAY NETWORK

Numerous measures instituted in 1946 for promotion of expeditious construction of the Interstate Highway Network. A number of organizations favored the program. The American Automobile Association issued an illustrated brochure designed to secure the support of the country's leaders for the network and a simpler illustrated folder for much wider distribution. About a dozen national organizations are joining in giving these materials wide distribution.

Much stress was placed on getting "demonstration sections" completed. The Automobile Club of Michigan and the Chicago Motor Club joined in employing a former president of the American Association of State Highway Officials to devote full time to promoting the development of the part of this network between Detroit and Chicago. Much progress has been made in lining up support along the route.

CALIFORNIA STUDY AS BASIS FOR HIGHWAY IMPROVEMENT PROGRAM

One of the year's developments of top-ranking significance was the thorough study which California made of road needs and costs, and of road revenue and sources. The purpose was to provide the legislature with the best possible bases for sound decisions as to a long-range program of highway improvement and as to how this should be financed.

The legislature set up a Joint Fact-Finding Committee on Highways, Streets and Bridges; $100,000 was appropriated (later supplemented with another $20,000). An Advisory Council was appointed, made up of 29 representatives of statewide public and private agencies interested in road problems.

It was decided at the outset to secure the services of the best qualified available specialists in the nation to act as consultants to a highly competent working staff. Active support of the U. S. Public Roads Administration was provided. The State Division of Highways (of the Public Works Department) supplied most of the basic data. Original research data were also supplied by the Public Roads Administration from nation-wide studies.

While the staff and consultants were busy, the Committee literally covered the state, holding hearings in every section and district so that every official agency, non-official group and individual with something to offer, could get to a hearing without having to travel far. Three comprehensive reports were presented in the latter part of 1946 as bases for the report of the Committee.

A preliminary report of the Joint Fact-Finding Committee was prepared. The committee proposes a total expenditure of at least $2,800,000,000 (July 1, 1945 to June 30, 1959) to condition segments of a road and street system which "are critically inadequate." The Committee also proposes a reclassification of roads and streets in accordance with the predominant purposes served. There would be a state highway system. Both county roads and city streets would be divided into a primary and a secondary classification. Motor vehicle users would be assigned primary financial responsibility for improvement and maintenance of the state highway system, and construction and replacement of a system of city streets of major importance and of primary county roads. The cost of other roads and streets to give access to land and dwellings would be borne by "present and prospective beneficiaries of their use." Taxes on the heavier vehicles would be increased to compensate for the inequity of the gasoline tax on the light vehicles since "gasoline consumption per mile does not increase proportionally to the gross weight of the vehicle."

The Committee would require, in addition to limitation of allocation of funds to counties and cities, the establishment of a centralized and efficient road or street administration in a county or city as a prerequisite to receiving state financial aid. It also proposes clarification in lines of authority and responsibility connecting the legislature, the executive department, and the highway commission. Policy making would be centered in a highway commission of not more than seven serving overlapping towns. appointed by the governor. The Committee states that "no amount of capital investment in a road or street plant can produce optimum service in the absence of effective regulation of highway use." Authority would be properly vested to control the conditions and standards of use of roads to prevent capital investment from "being destroyed by unrestricted operation of heavy vehicles on roads and bridges originally designed to carry light loads only." Law enforcement would be greatly improved.

SIMILAR STUDIES IN MICHIGAN AND ELSEWHERE

The Michigan Good Roads Federation in 1946 appointed a committee to carry out a similar program. The Michigan Committee is made up of representatives of the state highway department, counties, municipalities, the farm group, passenger car owners, petroleum, road equipment, road materials, and the commercial vehicle group. Initial plans for financing the study involve both governmental and private-business contributions. Michigan plans were being formulated and a staff was being organized at the year's end.

A number of national organizations are promoting the conduct of such studies in the other states. The American Automobile Association adopted a policy for such a program in every state and in favor of having the committee responsible for the study include both governmental and interested non-governmental groups. It urged a 5-10 year program and also that the committee work for continuity of the road program and of the major technical staff of the highway department.

CONNECTICUT POLICY TO MAINTAIN DESIGN STANDARDS

A decision made by the Connecticut highway department in 1946 can have very great significance. Design standards are being adopted for each mile of road based on present and estimated future traffic needs. As funds are made available, fair apportionment will be used to improve as many miles of the road as its share of the funds will buy at the adopted standards. The standards will not be reduced so as to permit building more mileage with available funds.

All too often across the country, standards have been reduced to permit meeting widespread demands for more road mileage. Such reductions have been most serious in the matter of widths of right-of-way. The inadequacy of rights-of-way on many heavy traffic routes now torments highway officials, and the cost of securing much greater widths is frequently almost prohibitive.

HIGHWAY RESEARCH NEEDS

The first full year of operation of the new highway research correlation service was carried on in 1946 for the state highway departments by the Highway Research Board of the National Research Council, National Academy of Sciences. The significance of this point is that it seems to mark an increased appreciation among state highway administrators of the great importance of having more highway research work done. Over the years, highway research has not only resulted in greatly improved roads but has paid for itself many times over through reductions in road construction and maintenance costs. longer road life, reduced costs of operating vehicles, accident reductions, decreases in delay and congestion.

The Public Roads Administration has given leadership both in the conduct of many highly important researches and in aiding and fostering research work. At the 1946 Highway Research Board meeting PRA staff members reported on important research projects concerning state highway administration, parking, highway and urban street capacity, right-of-way and highway border control, mechanical traffic counts, uses of highway planning survey data, highway maintenance costs, resurfacing concrete pavements, joints in concrete pavements, surface drainage, rigid and non-rigid pavement design.

In 1946, it became more generally realized that certain funds from the Federal Aid Highway Act of 1944 could be used for research by college and university groups acting for and under contract with one or more state highway departments. This realization may result in other college research work, such as the valuable work done for years at Iowa State College and in the Joint Highway Research Project at Purdue University. In 1946, a valuable study on tractive resistance on ice was reported by Prof. Ralph A. Moyer of Iowa State College. Researchers under the direction of Prof. K. B. Woods of Purdue won the Highway Research Board award for their paper on pavement blow-ups.

There still remains the serious problem of getting research results applied. The lag between important findings and general application is much too long. In part, this lag occurs because while there are some (though not enough) fine highway researchers, there are almost no highway research interpreters and research-use promoters where no commercial material or business gain is involved. In sharp contrast, representatives of highway materials organizations generally do a prompt and effective job of bringing out to potential users the meaning and application of research findings favorable to their product. In 1946, a start was made by the Highway Research Board in getting certain research findings better known.

VEHICLE SIZE AND WEIGHT STANDARDS

There are wide differences in the limits imposed on sizes and weights of vehicles by the laws of the various states. These differences complicate and hence increase the cost of manufacture. Moreover, where there is enforcement, these differences interfere with the interstate movement of vehicles which do not comply with limitations of each and every state traversed.

The American Association of State Highway Officials had not revised its standards since 1932. War conditions had brought further complications. Consequently the Association, after study by one of its committees, adopted new standards. The principal changes were from 16,000 to 18,000 lb. axle load, from 35 ft. to 40 ft. for a three-axle bus, from 35 ft. to 50 ft. for a tractor semi-trailer combination, from 45 ft. to 60 ft. for a truck-trailer combination, and substitution of a table for gross weights in place of a formula. The AASHO recognized the desirability of increasing permitted width from eight feet to eight feet six inches, but stated that highway development (lane widths) did not justify the increase at this time.

With most of the AASHO standards, there is quite general agreement among national groups principally interested. On a few matters, principally increased length and hence weight standards, there is some disagreement, as by the American Automobile Association. In part, such disagreement results from the dislike and fear of private motorists for very large vehicles and combinations on most roads. Thus, some aspects of the matter are subjective. Other aspects are objective, however, and it is encouraging that in 1946 one important study was undertaken, the results of which should reduce the area of disagreement. It is a study of the economics of size and weight factors in highway transportation.

UNIFORM TRAFFIC CONTROL DEVICES

During 1946, new and greatly improved standards for traffic signs, signals, markings, and islands were adopted by a joint committee of representatives of the American Association of State Highway Officials, Institute of Traffic Engineers, and National Conference on Street and Highway Safety. Examples of significant changes are larger signs for high speed, larger and clearer lettering, increased night effectiveness as by required illumination or reflectorization of such as stop signs, more clear route markings especially in cities, increased emphasis on locating traffic signals for satisfactory visibility, more attention to actuated signals (responsive to "requests" by vehicles), almost if not quite one and only one approved method of marking No Passing zones (instead of the numerous variances in effect today), better provisions for attracting motorist attention both day and night to the approach end of a safety zone or other island.

The new manual embodying these new standards will be published soon. It has been effectively designed for ready use and easier understanding.

SCHOOL BUS CONSTRUCTION STANDARDS

A new booklet *School Bus Standards* was published in 1946. Approved late in 1945, it was produced by a Conference on School Bus Standards. These standards were developed through the cooperative efforts of representatives of state education departments, with the advice of engineers of the automotive industry and consultants of institutions, agencies, and organizations interested in safety and school bus standards. This booklet replaced standards adopted in 1939. The new standards will provide greater safety and more economy for an important segment of our population.

PRESIDENT'S HIGHWAY SAFETY CONFERENCE

As traffic increased following the end of the war and the removal of restrictions, traffic casualties mounted alarmingly. In this connection, it should be pointed out that, in the public mind, it is the total number of traffic fatalities which is the reference point. Actually, fatalities in terms of vehicle-mileage is a much fairer comparison and on that basis the fatality rate did not rise alarmingly, but the total number did soar and the situation began to get headlines, much magazine, radio and speaking-platform attention.

The President decided to call a highway safety conference May 8-10, 1946. In the advance conferences it was agreed that new policies, new organization ideas, new methods were not the need. Plenty was known about how to reduce traffic casualties. The great need was to get action on the known ways of reducing the toll. Hence, the subject reports should be largely compilations of best accepted principle and practice, while the major attention of the conference would be on action-stimulation methods.

Time was short for organization of the conference staff, planning, lining up the nine conference committees, getting committee reports approved and printed, arranging for housing the conference, and handling invitations. Nevertheless, by heroic efforts, a generally splendid job was done in producing and getting adoption of the eight subject committee reports (with over 200 important recommendations) and an over-all action program.

Major conference outcomes were: (1) dramatizing the traffic safety problem and attracting increased attention to it by officials, agencies of public information, organizations of many types, and key leaders; (2) providing in summarized form comprehensive guides to action on laws and ordinances, accident records, education, enforcement, engineering, motor vehicle administration, and public information; (3) fostering the conduct of state and local traffic safety conferences and the adoption through them of programs of action; (4) fostering the organization of a Coordinating Committee for Federal departments and of a national committee of state officials dealing with traffic safety matters, enlargement and greater activity of a national committee of non-official organizations (National Committee for Traffic Safety), and further stimulation of the Committee on Uniform Traffic Laws and Ordinances; (5) stimulating numerous private organizations to undertake greater activity in traffic safety in their own names; (6) improving the understanding of many individuals as to the over-all traffic safety problem, the many corrections required, and the need for effective coordination.

Many would say that the major outcome was this proof of the practical life-saving value of the President's Conference and activities growing out of it. Compared to 1941, the last pre-war year of normal traffic, the first four months of 1946 produced about 1 per cent more fatalities than in 1941. For the seven months, for which data are available, beginning with May, fatalities in 1946 were 21 per cent less than in 1941.

Other factors not related to the President's Conference may have had significant effects on this improvement. The gradual return to more equilibrium after the "whoopee" reaction resulting from the war's end, increasing personnel in traffic activities with return of war veterans, termination of better paying war jobs, and growing public reaction resulting from publicity as to large increases compared in the usual way to the preceding year (first four months had 47 per cent more traffic fatalities).

NATIONAL COMMITTEE FOR TRAFFIC SAFETY

This Committee increased its list of participating organizations from about 50 to some 77 at the year end. Budget increases and a new joint financing plan were other significant developments. An inventory of activities and areas of interest is being made among participating organizations. Increased activity by all is being stimulated. Avoidance of undesirable duplicatory and overlapping activities is a goal. Development of cooperativeness and friendliness among organizations working in traffic safety is another important objective.

All too little has been known as to what the public thinks about various traffic and traffic safety matters. In 1946, a significant public opinion poll was conducted by one of the leading poll-taking organizations on behalf of the National Committee, with funds made available by the National Safety Council. "The Public's Attitude on Traffic Safety"—the resulting report—is an extensive analysis of great value, especially to those working in the field of traffic safety.

A project for development of a booklet on traffic safety in new (and re-planned) residential developments (or "subdivisions") was one special activity of the National Committee which reached tentative draft status in 1946. In general, however, the National Committee does not carry out original studies or projects, but rather stimulates such action by other appropriate existing groups.

AUTOMOTIVE SAFETY FOUNDATION

Among a number of new and enlarged activities of this body, a valuable service was instituted for states by analyzing, upon invitation, their vehicle code in comparison with the Uniform Vehicle Code. Similar analyses are offered to cities of their traffic ordinances in comparison to the Model Traffic Ordinance. This service will be of significant value in improvement of such legislation and in securing more uniformity.

AMERICAN AUTOMOBILE ASSOCIATION

Greatly increased activity for highway improvement and traffic safety was shown by the Association, which issued materials promoting the Interstate Highway System, issued a parking manual, and instituted a "Take It Easy" program directed to the individual driver and pedestrian and urging taking personal measures for safety.

NATIONAL SAFETY COUNCIL

The Council instituted an important joint study, with state highway officials and Public Roads Administration, of the relation of physical features of highways to traffic accidents. The progress report showed significant results. Valuable research on tractive resistance on ice, with and without different types of tire chains, was conducted.

AMERICAN RETAIL FEDERATION

The Federation published a brochure on parking problems in business districts, "Keep Customers Coming," with technical assistance by the Automotive Safety Foundation. Through this interest in parking, retailers became much more interested in getting maximum efficiency from existing streets and in new traffic facilities for present and future needs. Frequently, as in Los Angeles, a retail leader will be found heading a city or metropolitan traffic (or traffic and transit) committee.

HIGHWAY AND TRAFFIC LEGISLATION

Models for state and municipal traffic and vehicle legislation were reviewed and improved in 1946 by the Committee on Uniform Traffic Laws and Ordinances of the National Conference on Street and Highway Safety. While the National Conference was terminated in 1946, it was decided that the Committee should continue to function independently. This showed how important sound guides for uniformity in vehicle and traffic legislation were considered.

A significant analysis of state legislation, which authorizes the creation of "authorities" or agencies to deal with parking needs, was made as a Highway Research Board project. The 1946 report showed surprisingly that 22 states have some such legislation. Two alternative tentative models for comprehensive state enabling legislation for local parking agencies were the main outcome of this excellent analysis.

Kentucky enacted a controlled access highway law in 1946, making suitable provisions for express highways and their protection, thus bringing the number of states having such legislation to 24.

Texas in 1946 adopted an amendment to its constitution requiring that motorist taxes be used only for highway purposes, thus bringing the number of states having "anti-diversion" amendments to 19.

In the courts, in 1946, was a case which might constitute a serious precedent regarding a provision of the basic Federal Aid Highway Act. This provision is to the effect that "all highways constructed or reconstructed under the provisions of this act shall be free from tolls of all kinds." Portions of the Hutchinson River and Saw Mill River Parkways in Westchester County, New York, were constructed under the provisions of the Federal Aid Highway Act, with Federal Aid funds. Westchester County is seeking to be relieved of the "no toll" provision through legislation and transactions which amount to returning to the Federal Government the Federal Aid granted on those projects. State legislation (Chapter 594 of the Laws of 1945 of the State of New York) authorized the county to collect tolls on these roads. The American Automobile Association, recognizing a dangerous precedent in this matter caused a suit to be filed to prevent imposition of the proposed tolls. If Westchester County can thus be relieved of the Federal Aid Highway Act prohibition against tolls, the precedent may cause other states or counties to do likewise. A final decision is pending.

EDUCATION AND TRAINING

Grade Schools.—The elementary school age group is the only segment of our population which has received continuing effective traffic safety education for two decades. The value of such education is shown by the fact that from 1922 to 1945 the death rate of the 5-14-year group decreased about 26 per cent, while every other age group showed an increase of from 7 per cent to 175 per cent. The increase for all age groups was 55 per cent. In 1946, education of this age group was further extended and improved.

High School Driver Training.—In 1946, much ground was gained on including driver education and behind-the-wheel training as a course in high schools. The President's Highway Safety Conference recommended such courses, a recent film "Teach Them to Drive" was widely used in promoting such courses, the National Commission on Safety Education of the National Education Commission completed a manuscript for a new booklet "Let's Teach Driving" designed to encourage the introduction of such high school courses and discussing ways of doing so.

The American Automobile Association finished an extensive revision of its *Sportsmanlike Driving* textbook for such high school courses, re-instituted regional seminars (at Teachers College of Columbia University, George Peabody Teachers College, Purdue University and the University of Denver) for college professors who present courses to high school teachers on how to conduct effective driver education and training. Through its three experienced educational consultants (financed by the Automotive Safety Foundation), the Association also presented 40-hour intensive training courses to 500 high school teachers in 20 courses throughout the country. These staff specialists also aided six states in completing course of study outlines. Large numbers of driver testing devices and other teaching aids were made available during the year.

Traffic Engineers.—The Yale University Bureau of Highway Traffic re-instituted its graduate course of one academic year in traffic engineering. This course had been a war casualty. Several short in-service training courses in traffic engineering were conducted in different parts of the country during 1946.

Traffic Police.—The Northwestern University Traffic Institute continued its two four-month courses per year in traffic law enforcement, as well as various short in-service courses both at the University and in various sections of the country. The Federal Bureau of Investigation continued to include quite a substantial amount of traffic law enforcement work in its National Police Academy courses, now held three times a year. The University of North Carolina, Purdue University, and The Pennsylvania State College are examples of other institutions where enforcement and other courses are being effectively presented under direction of full-time staffs.

Motor Vehicle Fleet Supervisors.—During 1946, the National Committee for Motor Vehicle Fleet Supervisor Training arranged for and assisted in staffing 29 courses in universities throughout the country for supervisors of motor vehicle fleets, average attendance 35 to 40.

URBAN TRAFFIC PROBLEM

It is generally agreed that urban areas are our worst traffic trouble zones. Half of all vehicle-miles of highway use are in urban areas. The inadequacies of highway transport organization and facilities in cities have been growing for many years, while the importance of highway transportation to urban life has steadily increased. With its increased traffic, 1946 produced serious traffic conditions in most cities and critical problems in some. For many years city administrators have complained of having too limited tax resources to meet traffic (as well as many other) needs.

In many cities the financial picture is growing worse. There has been a marked trend of suburban development, with many residents moving to beyond the city limits. Decreased residence values have resulted, with inevitable loss in tax revenues. Business decentralization has also occurred, though in widely varying degree in different cities. Often business establishments have also relocated beyond the taxing limits of the central city. Yet, as the metropolitan community has grown, the central city has faced increasing requirements for public works and services.

The financial plight of cities has been recognized by states through the return of portions of motorist tax revenues to cities—though generally not in the amounts of such revenues which come from city residents. The Federal Aid Highway Act of 1944 provided aid for major urban highways (on the Federal Aid system). Twenty-five per cent of the $500,000,000 Federal Aid appropriation for each of three post-war years is available for such use when matched by an equal amount from state or local sources. Increasing numbers of cities are considering methods of taxation which will produce revenue from those who use city facilities and directly benefit by city services but live outside the municipal limits. A payroll tax is one example.

CITY PARKING

Numerous trials were given in 1946 to the idea of establishing parking lots where land is available and costs will be low, near but not in the central business district and serving users by shuttle buses looping between the lot and the downtown district. Among cities where this was tried were Atlanta, Hartford, Baltimore, Chicago, Cleveland, Grand Rapids, Harrisburg, St. Louis. Such trials are significant because it is admittedly difficult to keep parking costs low when off-street parking facilities are provided within the downtown district. Several such "perimeter parking—shuttle bus" plans have failed for lack of patrons. It may be, however, that by a low fee providing both for parking and bus trips, by frequent bus service, by reasonably adequate coverage of the downtown district before looping back without too much time loss involved, by a minimum of walking being necessary between passenger car and bus, and suitable waiting place or places at the parking lot, the plan can be made effective.

PERIODICAL PUBLICATIONS

Bus Transportation
330 West 42nd Street, New York City.
Economic Geology
Natural History Bldg., Urbana, Ill.
Electrical Communication
67 Broad Street, New York City.
Electrical World
330 West 42nd Street, New York City.
Gas Age-Record
9 East 38th Street, New York City.
Journal of the American Water Works Association
500 Fifth Ave., New York City.
Journal of Geology
5750 Ellis Ave., Chicago.
National Engineer
176 W. Adams Street, Chicago.
Public Service Magazine
1012 Pioneer Bldg., St. Paul, Minn.
Public Utilities Fortnightly
1038 Munsey Bldg., Washington, D. C.
Public Works
310 East 45th Street, New York City.
Sewage Works Journal
24 W. 40th Street, New York City.
Water Works and Sewerage
155 East 44th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Planning and Civic Association, 901 Union Trust Bldg., Washington, D. C.

American Public Utilities Bureau, 280 Broadway, New York City.

American Transit Association, 292 Madison Ave., New York City.

American Water Works Assn., 500 Fifth Ave., New York City.

Edison Electric Institute, 420 Lexington Ave., New York City.

International Assn. of Fire Fighters, A. F. L. Building, Washington, D. C.

National Parks Assn., 1214 Sixteenth St., N.W., Washington, D. C.

Park Assn. of New York City, Inc., 295 Madison Ave., New York City.

Public Service Commission (N. Y. State) Albany, N. Y. and 233 Broadway, New York City.

DIVISION IX

DEFENSE AND ARMAMENT

THE UNITED STATES ARMY

By Robert S. Thomas
Military Historian, Historical Division, War Department Special Staff

THE ARMY AND RECONVERSION

The first full calendar year of peace after the Second World War was one of necessary and difficult readjustments. Millions of soldiers had again to become civilians; thousands of industrial organizations had to begin conversion from war to peacetime production; hundreds of hastily conceived governmental bureaus and agencies had to be liquidated as rapidly as possible in order that our main effort could be concentrated on the achievement of a pattern of living keyed to the hope of peace rather than to the scourge of war.

For the Army it was not enough, nor was it feasible, to get all the soldiers home immediately from foreign shores. The myriad problems at home in arriving at a normal manner of living were multiplied endlessly abroad where the stark ruin of war's force had left behind it razed cities, disrupted communications, ruined crops, shattered economic systems, and gnawing human hopelessness. A tremendous rebuilding job faced the world. The Army of the United States had a definite and important part in doing that job. In the European and in the Asiatic theaters, occupation forces labored to stabilize their areas. Along with this constructive work, shared with Allied nations, went also the harsh and bitter task of bringing enemy war criminals to the bar of justice where established military tribunals heard and evaluated evidence and, finally, by bullets, by the rope, and with prison bars ended the free careers of most of the human beasts whose vicious lust for power and personal gain had loosed carnage and desolation on the world.

ARMY ORGANIZATION

At the close of 1946, administrative organization was headed by Robert P. Patterson, Secretary of War, with Kenneth C. Royall, Under Secretary of War; Howard C. Petersen, Assistant Secretary of War; W. Stuart Symington, Assistant Secretary of War for Air. The military phase of command included General Dwight D. Eisenhower, Chief of Staff; General Jacob L. Devers, in command of Army Ground Forces; and General Carl Spaatz, in command of Army Air Forces.

During the year there was approved a comprehensive system of unified military commands designed to place responsibility for the conduct of military operations of the land, naval, and air forces in the several regions of military importance to the United States, each in the hands of one commander. These commanders are: (1) Far East Command, General Douglas MacArthur; (2) Pacific Command, Admiral John H. Towers; (3) Alaskan Command, Major Gen. H. A. Craig; (4) Northeast Command, commander not yet named; (5) Atlantic Fleet, Admiral Marc A. Mitscher; (6) Carribbean Command, Lieut. Gen. Willis D. Crittenberger; (7) European Command, General Joseph T. McNarney.

The Chief of Staff, General Eisenhower, had as his assistants: General Thomas T. Handy, Deputy Chief of Staff; Major Gen. Willard S. Paul. Personnel and Administrative Division; Major Gen. Stephen J. Chamberlin, Intelligence Division; Lieut Gen. Charles P. Hall, Organization and Training Division; Lieut. Gen. LeRoy Lutes, Service, Supply, and Procurement Division; Major Gen Lauris Norstad, Research and Development Division; Major Gen. Henry S. Aurand, Research and Development Division.

The Chiefs of the several arms and departments were: Major Gen. Edward F. Witsell, Adjutant General's Department; Lieut. Gen. Daniel I Sultan, Inspector General's Department; Major Gen. Thomas B. Larkin, Quartermaster General's Department; Major Gen. Everett S. Hughes, Ordnance Department; Major Gen. W. H. Kasten, Chief of Finance; Major Gen. Norman T. Kirk. Surgeon General; Lieut. Gen. Raymond A. Wheeler, Chief of Engineers; Major Gen. Harry C. Ingles. Chief Signal Officer; Major Gen. Alden H. Waitt, Chief of Chemical Warfare Service.

ARMY AIR FORCES

In this arm of the service there was much and varied activity during the year, with a consistent effort to attain greater speed and range in the air. Some of the air events of 1946 are here set forth.

Shooting Star P-80's.—On May 15, 25 Lockheed Shooting Star P-80's left March Field, California, for a coast-to-coast tactical flight in the first continental exhibition of mass formation flying of the Army Air Force's new jet-propelled fighters. Six twin-engine Fairchild C-82 Flying Boxcars, new transports, accompanied to provide necessary supplies and maintenance personnel. In June, four jet pilots flew their machines in from the Pacific Coast in half a day's time, had lunch, and flew back to their Pacific Coast base. Another Shooting Star flew from the Atlantic to the Pacific Coast in less than 4 hours 15 minutes. On Aug. 10, a jetplane flew the 395 miles from Wright Field, Dayton, O., to Richmond, Va. in 40 minutes, an average speed of 592.5 miles an hour. This mark did not stand long since it was broken by an official record of 611 miles an hour made by an XP-84 Thunderjet. Nothing portrayed so vividly the swing to jet and rocket propulsion as development of the XS-1. This rocket-propelled Bell Aircraft is designed eventually to reach a speed of 1,700 miles an hour at an altitude of 80,000 feet. It was towed and glide-tested from a B-29 at 600-miles an hour speed, awaiting completion of a newer type rocket engine. This supersonic plane is really designed to function as a flying laboratory to test the secrets of the upper air.

Bombers.—There were three items of outstanding interest in this field during the year. On Aug. 6 the Army Air Forces proved the practicability of long-range remote-controlled flights when two crewless B-17 Flying Fortresses landed at Muroc Army Air Field, California, after a successful 2,600-mile overwater crossing from Hile Naval Air Station, Honolulu, T. H. The trip took 14 hours and 55 minutes, setting a new endurance record for remote-controlled operation.

The next noteworthy bomber event happened on Aug. 8 with a successful test flight of the Consolidated XB-36, the world's largest land-based bomber. This plane which dwarfs the famous B-29 planes of the Second World War fame is 163 feet long, has a wing-span of 230 feet, and a rudder height of 47 feet six inches. It is powered by six 3,000 horsepower Pratt and Whitney engines mounted on the trailing edge of the wing, three on each side of the fuselage. Each engine drives a three-bladed pusher-type propeller. The bomb-carrying capacity of the XB-36 is more than 30 tons, and it is flown by a crew of 15 men occupying two pressurized compartments.

The third bomber event of the year was the flight of the *Pacusan Dreamboat,* an Army Air Forces Boeing

B-29 Superfortress, which left Hickam Field, Hawaii, for Cairo, Egypt at 11:20 a.m. (Washington time) Oct. 4 in an attempt to fly approximately 10,000 miles non-stop. The bomber flew the Great Circle route, making its initial landfall at Juneau, Alaska, thence across the polar wastes and the North Polar region to Iceland, London, Paris, Foggia (Italy), and across the Mediterranean to Cairo. The plane landed in Cairo on Oct. 6, completing the non-stop flight in 39 hours, 36 minutes.

Pressure Suits.—Resembling a deep-sea diver's suit, supplemented by a goldfish bowl, this suit makes it possible for air crew members to ascend to 62,000 feet without loss of bodily functions. It counteracts the loss of external pressure in high altitudes.

"Operation Anopheles". — Using specially equipped Douglas C-47 planes, the Army Air Forces launched an operation in July against the deadly Anopheles mosquito. Flying at tree-top level, the C-47's sprayed swampy, mosquito-infested areas with a special solution of DDT. The aim was that of decreasing the malarial potential at mosquito-bound Army installations.

"Jato".—This is the Air Force name for a rocket motor to assist transport aircraft take-offs. With the aid of four Jato units, installed under the wing, a Douglas C-54 Skymaster took off after a ground run of less than 700 feet, whereas the normal distance is 3,000 feet. Each rocket unit, using the rapid expansion of heated gases to provide its thrust, produces 333 horsepower at 90 miles per hour for approximately 12 seconds.

Communications System.—Established officially Nov. 1, this new system will result in an annual savings of about $2,000,000. Nine Army Air Force Flight Service Centers were established: Olmstead Field, Pa.; Macdill Field, Fla.; Wright Field, O.; Maxwell Field, Ala.; Fort Worth, Tex.; Lowry Field, Col.; March Field and Hamilton Field, Calif.; and McChord Field, Wash. All centers are connected by Bell Telephone System Teletypewriter Exchange Service and the new network will include all Army Air Force radio ranges, high frequency direction-finding stations, Air Rescue Services, and the Civil Aeronautics Administration Communication System.

Fire Fighting and Rescue Equipment.—To meet new conditions and the demands of new equipment, the Air Force has modernized its fire fighting and rescue equipment. To provide swift entry to steel and aluminum fuselages of planes which have crashed, there is a new Forcible Entry Kit, containing powerful circular and push and pull saws. A new type winch provides tremendous force for a grappling hook. All powered equipment is mounted on a jeep which carries a three-kilowatt generator driven by a jeep engine. The unit includes crow-bars, axes, cutters, and other hand tools made of "non-sparking" materials so that spilled oil or gasoline at the scene of the crash may not be ignited. The unit also includes two walkie-talkie radios, a folding ladder, protective clothing for the operator, and two cylinders of carbon-dioxide. Large trucks carrying smothering "foam" clear paths through severe fires to enable the rescue crews to get in close and they also blanket the men with "fog" to keep them safe from flames while working.

Lycoming Engine.—The world's most powerful reciprocating aircraft engine, the Lycoming XR-7755, was produced at Williamsport, Pa. It develops 5,000 horsepower at take-off, a power equivalent to that of a modern railway locomotive. It has 36 cylinders in four banks of nine each and combines high power output necessary for take-off with low fuel consumption necessary for range.

Civil Air Patrol.—Federal appropriations were not available for this unit after March 31, 1946. However, its war services were formally recognized by the granting of a Federal charter, signed by President Truman on July 1. It thus acquired the same status as other patriotic, public service organizations like the Red Cross. The Civil Air Patrol had been formed originally in 1941 under the War Powers Act.

CAVALRY

Secretary Patterson, speaking at Fort Riley, Kan., announced that the old historic cavalry arm of our fighting forces was to be merged with the comparatively new armored force. The new, single unit is designated as "Armored Cavalry." During the Second World War, the cavalry was not organized into combat formations of the historic horse-borne type and the only large unit to see service was the 1st Cavalry Division which fought in the Philippines and occupied Tokyo after the Japanese surrender. However, they fought as "Dismounted Cavalry," so that their employment was similar to infantry.

ARMY ENGINEER CORPS

This was an extremely busy year for the Army Engineer Corps, especially in getting under way the Veterans Administration hospital building plan. Aside from hospital contracting, the Engineer Corps was concerned with many other items of general interest. The Corps undertook the construction of post-war Army facilities in Alaska at a cost of $25,000,000, and the development and construction of five and possibly six permanent Reserve Fleet sites for the United States Maritime Commission, which has made $10,000,000 available for this job. The five assured sites are located in the James River, at Lee Hall, Va.; Brunswick River, Wilmington, N. C.; Tensaw River, Mobile, Ala.; Neches River, Beaumont, Tex.; and Suisun Bay, Benicia, Calif. The sixth site under consideration is one of two located in the Columbia River area.

From VJ-Day to June 1, 1946, the Engineers let civil works contracts for more than $91,000,000. These projects were scattered throughout 39 states and ranged in money value from $10,000 to $21,000,000.

Some of the Veterans Administration hospital contracts let by the Engineer Corps during 1946 were for hospitals: Big Springs, Tex.; Seattle, Wash.; Wilkes-Barre, Pa.; Wilmington, Del.; Omaha, Neb.; Fresno, Calif.; Miles City, Mont.; Iron Mountain, Mich.; Decatur, Ill.; Shreveport, La.; Durham and Charlotte, N. C.; Oklahoma City, Okla.; Toledo, O.; New Orleans, La.; Klamath Falls, Ore.; Dallas, Tex.; El Paso, Tex.; Tupelo, Miss.; Little Rock, Ark.; Tallahassee, Fla.; Providence, R. I.; Bonham, Tex.; Peekskill, N. Y.; Jefferson Barracks, Mo.; Minneapolis, Minn.; Houston, Tex.; Greenville, S. C.; Washington, D. C.; Dallas, Tex.; Norman, Okla.; Duluth, Minn.; Gainesville, Fla.; New York, N. Y.; Madison, Wis.; Sioux Falls, S. D.; Minot, N. D.; Grand Junction, Colo.; Americus, Ga.; and Erie, Pa.

ARMY MEDICAL CORPS

Streptomycin.—This drug was clinically tested at Halloran General Hospital where it was found to be effective against more than half the infective bacteria generally encountered. During the year, the Civilian Production Administration effected better distribution of the available amounts of the drug so that quantities needed for treatment of civilian cases need no longer be requisitioned from the Army Medical Department.

Dengue Fever. — The Commission on Neurotropic Virus Diseases announced that an effective vaccine had been secured against dengue fever. It was found that this malady, which occurs in epidemics and sometimes pandemics throughout the warmer portions of the temperate zone, is owing to a filterable virus first isolated in Hawaii by Army doctors. It was then brought to the mainland where it underwent consecutive passages through the brains of mice before the vaccine was produced.

Venereal Disease. — This disease reached a high of 69 men per thousand per year in the Army during 1945. In 1946, figures released were: United States, one of every 1,000 troops; European Theater, one of every 200 troops; Western Pacific

Area, one of every 333 troops; total overseas rate, one of every 250 troops. To cut down loss of man-hours in the Army caused by this illness, a group of 36 skilled military preventive medicine officers attended 32-weeks' courses in Harvard and Johns Hopkins Universities. Graduated from these courses, these disease detectives, armed with the latest techniques in ferreting out sources of endemic diseases, took to the field to prevent, curb, and treat such illnesses. In Korea, Japan, and Germany, they took an active part in the Army's measures to stamp out venereal-breeding dens.

Nurses.—The Surgeon General set up recall-to-duty quotas for 1,000 nurses and 100 medical administrative officers during July. This was done to ensure the best possible care to some 90,000 patients remaining in Army hospitals.

Carbon-14. — In August, Manhattan Engineer District, key organization in the development of the atomic bomb, shipped from Oak Ridge, Tenn. the first radioactive isotopes to the nation's research institutions. These first peacetime products of the Government's atomic energy facilities were pea-sized units of Carbon-14. These, for the next 10.000 to 25.000 years will emit 37,000,000 beta particles per second, and will be used in research in connection with cancer, diabetes, photosynthesis, carbon deposition in the teeth and bones, and in the utilization of fats by the human body.

Technicians. — The Surgeon General stated that the number of technicians trained during the Second World War, July, 1939 to June, 1946. was 114.997. Twelve general hospitals and medical centers of the Army offered courses for enlisted technicians in X-ray, veterinary medicine, medicine, surgery, dentistry, laboratory, pharmacy, meat and dairy inspection, orthopedic machinery, medical equipment maintenance, and sanitation.

ALCAN HIGHWAY

April 3 ceremonies at Whitehorse, Yukon Territory, marked the taking over by Canada from the United States of the Alaska highway, the airfields on the Northwest Staging Route, the telephone system from Edmonton to the Alaskan border, and other defense projects in the Northwest.

ATOMIC RESEARCH

Army experts participated actively with Navy experts in Operations Crossroads, the Joint Army and Navy atomic bombings at Bikini Atoll which tested the reaction to atomic blasts to materiel and ammunition items as well as vessels which carried them.

The War Department made a contract with the General Electric Company for atomic research and development. This also included the transfer of responsibility for operation of the $347.000,000 government-owned plant at Hanford, Wash., from E. I. du Pont de Nemours and Co.

The Department backed a cooperative effort by the Air Force and the Manhattan Engineering District to attempt to solve the problem of using atomic energy for the propulsion of aircraft.

Plans were announced for the establishment of a $20,000.000 nuclear research laboratory near Schenectady, N. Y., for the study of power generation from atomic energy. This is to be known as the Knolls Atomic Power Laboratory, the fourth in the network of such laboratories. The other three are the Clinton Laboratory at Oak Ridge, Tenn.; the Argonne National Laboratory at Chicago; and the Brookhaven National Laboratory on Long Island.

The Atomic Energy Commission took over the organization and properties of the Manhattan Engineer District, the War Department atomic energy agency on Jan. 1, 1947.

CASTE SYSTEM

A Board headed by Lieut. Gen. James H. Doolittle made recommendations for improvement of relationships between officers and men of the Army. Recommendations were: (1) improve leadership in the Army; (2)

take steps to provide all military personnel with a sense of security, substantial compensation for duty, and responsibility from bottom to top, equitable distribution of allowances, and assurance of a chance for advancement; (3) allow enlisted men to accumulate leave or furlough time and be granted terminal leave pay on the same basis as now provided for commissioned personnel; (4) that all military personnel when off duty pursue normal social patterns comparable to our democratic way of life; (5) that there be no discriminatory references as between officers and enlisted men and their families; (6) definite equality of treatment of both enlisted and commissioned personnel in the administration of military justice; (7) abolition of the hand salute away from Army installations and off duty; (8) establish a system of decorations and awards which will provide a more equitable distribution on the basis of merit and prohibit distribution to a degree that will tend to cheapen them; (9) improve system for registering complaints; (10) so word regulations as to prohibit or minimize possible abuses of authority and the prestige that goes with higher rank and responsibility; (11) abolish all statutes, regulations, customs, etc., discouraging or forbidding social associations of soldiers because of military rank; (12) eliminate the terms "enlisted men" and "officers"; (13) encourage close contact and association with civilians.

CASUALTIES

Casualty statistics were released by the War Department in May to cover the period from Dec. 7, 1941 through Feb. 26, 1946. The number of Army battle deaths was set at 229,238 for all theaters, and the total number of battle casualties of all types, including wounded, injured, captured, and missing was set at 948,418. The European Theater, with the greatest manpower, suffered the highest number of casualties in all brackets—592,074. The Mediterranean Theater was second with 178,602. The two were followed in order by the Pacific Theater, China-Burma-India Theater, Africa-Middle East, United States Army Strategic Air Force, the Alaskan Department, and the Caribbean and South Atlantic areas. A total of 835 battle casualties, including 548 deaths, was listed as en route and not chargeable to any command.

CONTRACTS

By July 15, the War Department had achieved final settlement of 97.4 per cent of terminated contracts. In November, Under Secretary Kenneth C. Royall announced the establishment of a centralized audit agency to perform, on an Army-wide basis, all War Department internal audit functions in the fields of contracts, property administration, military property accounts, and payroll records. This is expected to assure standardization and uniformity of property operations.

COSTS

The cost of maintaining and equipping a soldier for his first year in the Army in continental United States is now $590.68 or $125.42 more than the same cost in 1944. The total sum is broken down as follows: Food, $233.92; Clothing, $237.16; Individual equipment, $56.18; Barrack equipment, $63.42.

SCOUT DOGS

On the basis of the Second World War experience, the War Department decided to concentrate on German shepherd dogs for scout service training. The Army Dog Association was formed to secure dogs of this breed which would meet the Army's rigid requirements. Initially it was planned to train four Scout Dog Platoons of 27 dogs each. Training points are located at Camp Campbell, Ky., Fort Bragg, N. C., Fort Lewis, Wash., and Fort Riley, Kan.

SERVICE EDUCATION

In January, 90 selected Army and Navy officers were enrolled in the first post-war course in industrial mobilization at the Army Industrial College. (In May the name of this school was changed to Industrial College of the Armed Forces.) In the same month, an Army Information School was established at Carlisle Barracks, Pa., to train officers and enlisted men as specialists in public relations and in information duties. In order to provide space for this new school, the Medical Field Service School was moved from Carlisle, Pa. to Fort Sam Houston, Texas.

In March, 1946, for the first time. Second World War veterans up to 24 years of age, sons of deceased veterans of the Second World War, and sons of Congressional Medal of Honor men were allowed to participate in the annual entrance examinations for admission to the U. S. Military Academy at West Point.

On Feb. 5, 1946, the War Department's School of Civilian Personnel Administration graduated 45 officers who had completed courses in better standards of personnel practice.

All Signal Corps school work was consolidated at Fort Monmouth N. J. This required, among other things, deactivation of the Central Signal Corps School formerly located at Camp Crowder, Mo., and reactivation of the Enlisted Men's School of the Eastern Signal Corps Schools.

A new Ordnance School was organized at Aberdeen Proving Ground, Md., to train men in all types of ordnance work in courses of six to nine months. The Army Ground Forces Replacement and School Command was moved from Birmingham, Ala. to Fort Bragg, N. C. The Army Air Forces Special Staff School at Orlando, Fla. graduated its first class of public relations officers on March 1. 1946.

The Secretary of War approved a new post-war curriculum for the U. S. Military Academy. The four-year course was reestablished, provision was made for basic collegiate courses, and branch specialization, including aviation, was relinquished to the post-graduate special service schools.

Arrangements were made whereby some 90 correspondence and self-teaching courses, prepared by the United States Armed Forces Institute, will be made available to personnel in veterans' hospitals.

Beginning in March, 1946, a series of ten lectures on nuclear physics was given to Army Air Force personnel in the Pentagon Building, Washington, D. C. by distinguished scientists.

NATIONAL WAR COLLEGE

The Army and Navy Staff College was redesignated as the National War College on April 1. This is now the highest level educational institution of the armed forces and the State Department. The staff of the new school, located in the old Army War College building in Washington, D.C., is made up of officers of the armed forces and outstanding personnel of the State Department. The first course of instruction began on Sept. 3 and covered a wide range of civilian subjects pertinent to national planning and national defense, including a study of foreign policy, international law, and international relations.

TRAINING AND RESEARCH

A new School for Government of Occupied Areas was opened at Carlisle Barracks to train eventually 2,400 officers and key civilians for military government duties in Europe and the Far East.

The first post-war session of the three-months' course at the Army Chaplains School, Fort Oglethorpe, Ga., closed May 1, 1946. The course was designed to give chaplains a better idea of their peacetime job with the Army.

In May, Secretary of War Patterson announced the creation of a Research and Developments Division of the General Staff to coordinate Army research with the activities of industry and educational institutions.

The Army Air Forces opened a school for musicians at Bolling Field, D. C. It is designed as a clearing house for the 34 Army Air Forces bands scattered throughout the country.

The Coast Artillery School, founded in 1824, was moved during June from

Fort Monroe, Va., to Fort Winfield Scott, Calif.

ARMY FOOD SERVICE SCHOOLS

Army Food Service Schools opened their first classes July 10. Formerly this schooling was known as Army Bakers and Cooks Schools. Four leading schools cooperated with the War Department in training officers in the scientific problems involved in research and development of food products and food containers used by the Army. Provision was made to include a course in mess management in the West Point curriculum for 1947.

ARMY GROUND FORCES

Six Army Ground-Forces Schools were reorganized in November. They were Airborne School, Fort Benning Ga.; Coast Artillery School, Fort Winfield Scott, Calif.; Antiaircraft School, Fort Bliss, Tex.; Air Training School, Fort Sill, Okla.; and the Cavalry and Intelligence Schools, both at Fort Riley, Kansas.

Army Ground Forces completed arrangements for sending approximately 400 officers yearly to the nation's leading schools and universities for advanced study.

ELECTRONICS

An interesting development in this field was publicly released for discussion in January, 1946. The War and Navy Departments jointly suggested a procedure for removal of barriers against utilization by the radio and electrical manufacturing industries of valuable wartime developments in electronic techniques, equipments, and manufacturing processes. Recommendations were made that a cooperative, non-profit organization be established to administer electronic patents resulting from the radar program and to license manufacturers to take advantage of these developments. This procedure was, of course, out of the question in wartime.

Possibly the most interesting electronic device of the year, construction of which was begun in 1943, is known as ENIAC (Electronic Numerical Integrator and Computer) and is really a large-scale electronic general purpose computing machine. Occupying a room 30′ x 50′, ENIAC weighs 30 tons and has 100 feet of front panels. It is the most intricate and complex electronic device in the world and requires 18,000 electronic tubes for its operation. Its construction was begun at the request of the Ordnance Department to break a mathematical bottleneck in ballistic research. ENIAC is the invention of Dr. J. W. Mauchly and J. Presper Eckert, both of the Moore School of Electrical Engineering of the University of Pennsylvania where the machine was built.

FERTILIZER FOR FOREIGN COUNTRIES

Fifteen Army Ordnance plants were converted, as a temporary measure, from the production of explosives to the manufacture of nitrogen fertilizers for shipment to starving countries to increase the growth of food. Under full production, these plants can produce 70,000 tons of ammonium nitrate per month.

FOG RESEARCH

A joint experimental and research project to test landing aids under adverse weather conditions was set up by Army Air Forces and Navy Bureau of Aeronautics at the Naval Auxiliary Air Station, Arcata, Calif. FIDO ("Fog Intensive, Dispersal Of") systems, so valuable in the British Isles during the Second World War, were completed and flight-tested at Arcata.

FOOD RATIONS AND TESTS

A new 5-in-one ration, consisting of five rations in one package, was developed by the Quartermaster Corps to feed small groups of soldiers separated from their kitchens. The ration contains from 3,566 to 4,056 calories. When packaged it weighs 25 pounds, a suitable size to be animal packed or man-carried, and it may be parachute-dropped with a minimum of damage to package or contents. This package will provide enough food for five men for one day, and the ration has been found to be stable under divergent climatic conditions.

Tests made at Chicago proved that fresh frozen pork sausage prepared without salt keeps better than that prepared with salt. The tests indicated that seasonings other than salt had but little effect on the development of rancidity in the sausage during freezing, storage, and cooking.

During the year, regular shipments of frozen whole milk were made to troops in Pacific Area hospitals, to Regular Army messes, and to hospitals in the American occupied zone in Germany.

IMPORTED HORSES

A second shipment of 100 of the finest brood mares and stallions in the European Axis countries reached the United States in August. Most of these animals were captured from the German Wehrmacht by the American Army of Invasion.

ARMY HOUSING

In an effort to alleviate the acute housing shortages, the War Department, through the Corps of Engineers, converted many existing barracks and other buildings into family units. Camp Shanks, wartime staging area at Orangeburg, N. Y., was one of the first to be marked for such purposes. New Army construction to the value of $9,316,000 was deferred in order to turn more supplies to civilian building. Along with this went the use of $44,965.000 to provide essential construction of housing within posts. camps, and stations in critical areas of the United States for military personnel and their families now living in overcrowded neighboring communities. The Army's mission in occupied areas and overseas bases, particularly in the Pacific, was greatly impeded by the housing shortage. From the Philippines it was reported that it was only possible to accommodate 30 per cent of the dependents who wished to join troops there.

MANEUVERS

Using the experience of 162 separate combat amphibious operations in the two theaters of the Second World War, the Army Ground Forces, in conjunction with the Army Air Forces, perfected plans for a division-scale maneuver from Sept. 1 to Dec. 1. During part of this exercise, Army forces participated in amphibious exercises conducted by the Commander Amphibious Force, U. S. Pacific Fleet. The joint Army-Navy amphibious operations in the San Diego—San Clements Island—Oceanside area of southern California were the only war exercises of the Army in the United States for the year.

MUNITIONS

One of the leading heavy weapons was the self-propelled 240-mm howitzer, shown at the Fort Sill Artillery Conference in March, 1946. In October, a weapons show staged at Aberdeen Proving Grounds, Maryland, revealed considerable progress in new weapons. Among these were the caliber .60 machine gun; the 75-mm. and 105-mm recoilless rifles; the M 1 rifle modified for full automatic fire as well as semi-automatic; a new VT fuse; a new high-power antiaircraft weapon, the multiple gun motor carriage T-77 mounting six, caliber .50 machine guns; a new tank, the T-28, weighing nearly 100 tons and mounting a 105-mm. gun and a .50-caliber machine gun; and a 75-mm. automatic gun for airplanes, giving the plane greatly increased firepower.

There was considerable experimentation at White Sands, New Mexico, with all types of rockets, particularly the captured German V-2 type. A guided missile GAPA (Ground-to-Air Pilotless Aircraft) was revealed to the public. It is a pencil-slim, ten-foot projectile which, when perfected, will be capable of seeking out and destroying possible weapons before they can register on their targets. The further trend of experiments during the year indicated that Second World War high explosive bullets and projectiles will be replaced in the future by high-speed metallic jets capable of traveling at an initial velocity of 25,000 feet per second.

Many of the newer items of munitions and quartermaster supplies were undergoing tests in the closing months of the year under frigid Alaskan weather conditions. Three task forces, totaling 4,500 men, were assigned to this job, and the forces were known as "Frost," "Frigid," and "Williwaw," respectively.

NATIONAL GUARD

Total strength of the post-war National Guard was set at approximately 622,500 officers and men. The aggregate of National Guardsmen inducted into Federal service prior to the Second World War was 300,034. In the post-war Ground Forces of the National Guard the principal units will be about 22 infantry divisions, two armored divisions, and some 18 regimental combat teams. The post-war Air Forces will include 12 wings, 27 groups, and 84 squadrons, along with 12 control and warning groups.

In the capitals of 45 states, Puerto Rico, and Hawaii, on Armistice Day National Guard colors and guidons carried in the Second World War were returned to approximately 3,000 National Guard units with appropriate ceremonies.

MILITARY OCCUPATION DEVELOPMENTS

General MacArthur in Japan reported that the people of that nation were developing a sense of political responsibility, one of the first steps towards building a true democracy.

In Austria, General Mark Clark made steady progress in all fields of reconstruction, particularly in restoring rail and water traffic routes.

General McNarney granted amnesty to about 800,000 "little Nazis" within the American zone of occupation in Europe.

In all the theaters of occupation. along with the heavy work of reconstruction went the task of destroying the criminals responsible for the war.

ARMY OFFICERS

Statistics released during the year showed that more than 500,000 enlisted men became officers during the Second World War. Between Dec. 7, 1941 and Sept. 2, 1945 there was an aggregate of 872,000 male commissioned officers in the Army. Of these, 72,000 were medical officers and chaplains. Of the remainder, 66.37 per cent were commissioned after serving as enlisted men. There were approximately 67,000 female officers in the Army. Of these, 60.000 were medical personnel, nearly all of them nurses. The remaining 7,000 were officers of the Women's Army Corps, practically all of whom rose from the ranks. During the year, officer strength was raised successively until, by September, the original increase of 25,000 had been raised to 50,000.

ORGANIZED RESERVE CORPS

During the summer, activation of Organized Reserve Corps Units was begun. War Department planning for this Corps provides that the units will be organized under three classifications: (1) war strength units with a full complement of officers and enlisted men, supplied with all essential equipment required for training and initial mobilization; (2) units with a full complement of officers and a cadre of key enlisted personnel and essential training equipment; and (3) units with an assigned complement of officers only. Under this plan, activation under the third class was begun in the six Army areas on July 1. On Nov. 9, General Devers announced that 116 ground or technical service type units had already been activated.

PANAMA CANAL

In January 1946, the War Department announced the first routing of a large ship from the Philippines direct to New York, through the Panama Canal. This was the *West Point,* formerly the *America,* largest and fastest United States passenger liner ever built. On this trip she carried 7,500 American troops. The only other troopship which had been thus routed to date was the *Explorer,* carrying 2,150 troops, which left Nagoya, Japan on Dec. 10, 1945 and arrived in

New York, Jan. 3, 1946. Shipping is now surplus on all oceans, and by routing troops direct to east coast ports, as these two vessels sailed, considerable pressure was taken off continental railway lines from San Francisco to New York.

ARMY PAY

As a measure to encourage recruiting of enlisted men and to pay officers in rates more commensurate with the professional requirements demanded of them, new pay schedules were set up during the year. Previous legislation in 1942 had raised pay of privates from $21 a month (1922 scale) to $50 a month. The latest legislation took this basic rate up to $60 a month.

The Armed Forces Leave Act of 1946, signed by the President on Aug. 16, equalized the leave benefits of officers and enlisted men and brought an estimated $2,700,000,000 in cash and interest-bearing five-year bonds into the pockets of about 15,000,000 former Army, Navy, Marine Corps, and Coast Guard members. The basic law regarding leaves dates from 1874, and, prior to this present enactment, it had been last amended in 1876. Essentially, the new law gives officers and enlisted men and women of all services identical leave rights and limits the amount of leave, which any individual may accrue, to 60 days.

PRISONERS OF WAR

The last Japanese prisoners of war left the United States on Jan. 9, 1946. A total of 5,431 Japanese war prisoners had originally been interned in this country, held in the two principal camps of McCoy, Wis. and Clarinda, Ia.

Between the spring of 1942 and July 22, 1946, when the final group of able-bodied prisoners of war was shipped out for repatriation, there were brought to this country as prisoners a total of 378,898 Germans. 51,455 Italians, and 5,435 Japanese. After the July 22d repatriation shipment, there remained in the United States 140 Germans, 15 Italians, and one Japanese serving Federal prison sentences for crimes committed while interned; 81 German and three Italian hospital patients, too ill to be moved; and 28 German and 15 Italian escapees still at large. While held here, scattered among 155 base camps and more than 500 branch camps, these prisoners were widely used for essential work on military installations and in private contract labor in agriculture, lumbering, food processing, and other vital industries suffering from acute labor shortages.

RADAR

Army Signal Corps scientists at the Evans Signal Laboratory, Belmar, N. J., made radar contact with the moon on Jan. 10, 1946. The equipment used for this experiment comprised extensive adaptations to a standard wartime Signal Corps radar known as Radio Set SCR-271, originally designed in 1937 for long-range early warning against enemy air attack. It was an early model of this set which detected Japanese planes approaching Pearl Harbor on Dec. 7, 1941 while they were still over 100 miles away. The moon-reaching radar was operated at its standard frequency of 122 megacycles; its alternating-current radio waves made 112,000,000 complete cycles per second, but the pulse repetition rate and pulse width were extended beyond the usual standards. Instead of sending out several thousand spaced pulses each second, the modified radar transmitted a pulse only every five seconds. The pulse width was increased from a few billionths of a second to as much as one-half second. This equipment, therefore, sent out a half-second pulse of radio energy every five seconds. To prevent the set from being burned out by the enormous pulse power it had to generate, water-cooled vacuum tubes were used.

To acquaint the general public with the use of radar in wartime, Major Gen. Henry C. Ingles, Chief Signal Officer of the Army, explained some of the uses of radar in combat. He told how specially adapted Signal

Corps radar was used to obtain accurate oscilloscope bearings on both the upward and downward paths of enemy projectiles, and how the entire trajectory of the shell was plotted from these bearings and extended geometrically to indicate the exact location of the gun. Radars used to detect enemy night traffic had the uncanny faculty of being able to track all moving objects in the area covered by the radar beam. Vehicular targets were detected by radar at ranges up to 16 miles, individual troops were detected at ranges up to three miles, and radar technicians became so proficient they could estimate the number of enemy soldiers in a group and the type and speed of enemy vehicles.

Radar was used in this country in an attempt to track the German V-2 rockets which were fired for testing at White Sands. The purpose was to try to keep a finger on these 3,000-miles-per-hour missiles as they arched across the sky. If this experiment eventually proves successful, then some means can readily be devised of exploding the V-2's harmlessly in mid-air before they can reach their targets.

Lightweight airborne radar equipment was used for the first time when a C-54 flew from Westover Field, Mass. to Paris, France. The Air Forces indicated that some of the contributions to the safety of flights made by the use of this lightweight airborne radar are: (1) ability to "see" turbulence and dangerous storm conditions on the flight path and therefore avoid them; (2) a method of accurate, short-range position fixing, made possible by employment of radar beacons; (3) an anti-collision device effective during instrument and night flying; (4) an obstruction warning device for the avoidance of mountains and other terrestrial obstructions.

As of January, 1946, the Army Air Forces stated that approximately 20,000 successful landings had been accomplished through the use of radar ground-controlled approach landing-systems for aircraft during fog conditions and periods of absolute minimum visibility.

RECRUITING

When Congress passed the Armed Forces Voluntary Recruitment Act of 1945 on Oct. 6 of that year, the recruiting program got under way. Major Gen. Harold N. Gilbert, in charge of the program, announced that it was necessary to "Make It a Million" to meet the Army's immediate personnel needs. On Oct. 18, 1946 the attainment of the million mark was observed in ceremonies in the office of the Secretary of War. At that time, Major Gen. Witsell, the Adjutant General, cautioned that, whereas the million mark had been reached, it must be kept in mind that half of the Army's enlisted strength would be eligible for discharge by the summer of 1947. He thus showed the necessity of maintaining an average voluntary enlistment rate of 40,000 men a month.

An entirely new venture in recruiting was announced in October. In order to bring skilled personnel into the United States Army and also to offer the Army as a career to many men heretofore barred from such an opportunity because of disability caused by honorable service, the War Department announced that certain categories of disabled veterans would be accepted for enlistment in the Regular Army. Richard Montgomery, 29 years old, of Pittsburgh, Pa., was the first disabled combat veteran to reenter the Army under this provision. He had been an Air Force Master Sergeant in the Second World War and lost his left arm in aerial combat over Rangoon.

ARMY REORGANIZATION

In line with reduction of the Army from a peak strength of more than 8,000,000 to 1,550,000, the War Department, as of June 11, put into effect a major reorganization of the War Department and the Army. The functions formerly assigned to the Services of Supply or the Army Service Forces were ordered reassigned to other units and the former-named Services were abolished.

The former military organization. designed for global war functioned admirably for that purpose. However, the transition from war to peace and the reduction in size and scope of activities of the Army made major reorganization a necessity in many more lines than the abolition of the Army Service Forces previously indicated.

Under the new reorganization, duties of the Secretary of War, the Under Secretary, and the Assistant Secretaries remain practically unchanged. The authority of the Chief of Staff was considerably broadened. A new unit, the Research and Development Division, was added to the General Staff, and heads of General Staff Divisions were henceforth to be known as "Directors" instead of "Assistant Chiefs of Staff." Autonomy of the Army Air Forces was increased, and the authority of the Commanding General, Army Air Forces, was increased with respect to administrative, operational, command, research, procurement, and budgetary activities. Air bases and other installations in continental United States are designated to operate under air commands set up by Headquarters, Army Air Forces.

In the field, Eastern and Western Defense commands and the nine service commands, as such, were discontinued. Their functions were taken over by Army Commanders. The head of the Army Ground Forces, General Jacob L. Devers, was placed in command of the six Armies located in continental United States. As originally set up under this reorganization plan, Army Commanders were: First, General Courtney H. Hodges; Second, Lieut. Gen. William H. Simpson (succeeded by Lieut. Gen. Albert C. Wedemeyer); Third, to remain on occupation duty in Germany; Fourth, General Jonathan Wainwright; Fifth, Lieut. Gen. Walton H. Walker; Sixth, General Joseph W. Stilwell (succeeded by Major Gen. Geo. P. Hays); Seventh, recently inactivated in Germany and to be reorganized in the United States in Third Army Area.

The reorganization plan continued the Military District of Washington as a separate command. The territory in each of the six new Army areas embraced the following state groups: First, New England, New York, New Jersey, Delaware; Second, Pennsylvania, Maryland, Virginia, West Virginia, Ohio, Indiana, Kentucky; Third, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi; Fourth, Arkansas, Louisiana, Oklahoma, Texas, New Mexico; Fifth, North Dakota, South Dakota, Minnesota, Wisconsin, Michigan, Illinois, Iowa, Missouri, Nebraska, Kansas; Sixth, Montana, Idaho, Utah, Arizona, Nevada, Washington, Oregon, California.

RESERVE OFFICERS TRAINING CORPS

In May 1946, the War Department announced approval of a post-war policy for this unit, making provision for military training in two divisions, the Junior ROTC at approximately the secondary school educational level and the Senior ROTC at the junior college and college level. In so far as existing law and appropriations permitted, the program was put into effect with the start of the fall school term of 1946. By April 22, approximately 330,000 officers of the Army had accepted commissions in the Officers Reserve Corps and more than 370,000 enlisted personnel had enlisted in the Enlisted Reserve Corps.

SALVAGE AND SURPLUS

In January 1946, the War Department announced that ferrous scrap, except that located in United States-occupied Germany and Japan, would be returned to the United States only to the extent required for ship ballast. Aluminum scrap was disposed of locally overseas. Copper and brass scrap was returned to the United States from all overseas commands except France, Belgium, England, and The Netherlands where it was disposed of locally to assist in civilian rehabilitation.

Napalm, powerful incendiary agent on the battlefield, was used successfully to make a fine grade of soap.

On Dec. 15, the War Department announced that the Army was virtually up-to-date on disposition of surplus wartime equipment in the United States. Dispositions of domestic surplus to that date, exclusive of real estate, totaled $21,000,000,000, of which $7,000,000,000 was disposed of directly by the War Department and the remainder declared to disposal agencies. The largest single item turned over by any Technical Service for disposal was trucks. More than 132,000 trucks, excluding jeeps, with a value of about $195,000,000 were declared surplus.

ARMY TRAINING PROGRAMS

By mid-summer, training programs were well under way in the Army. The Army Forces established 40 Air Reserve training bases to start their program. Intensive post-war Ordnance training got under way at Army Ordnance Department's installations and at various universities throughout the country. In order to standardize officer training for the ground arms and services, a new Army Officer Candidate School program was established at Fort Benning, Ga., in July. Army officers, other than those assigned to the Air Forces and who have had comparatively short terms of active service, will be given an opportunity to round out their military education through an established supplementary education and training program. This calls for instruction at a division, base, or similar level and will extend over a period of six months. Primarily, the program was established to benefit officers, commissioned in the Regular Army since 1940, lacking experience or instruction at service schools.

Army Ground Forces announced that, as of Nov. 10, it would assume responsibility for the recruit training of all Army enlisted men, other than Air Forces.

UNIFORMS

After June 30, 1948, officers and men of the Army will dress alike. This move also paves the way for eventual adoption of dress blue uniforms for officers and men provided they can be procured and manufactured without interfering with the production of civilian clothing.

UNIVERSAL MILITARY TRAINING

One year of military training for all physically and mentally fit young men of the nation between the ages of 17 and 20, to include six months of intensive military and technical specialist training and an additional six months or equivalent in one of eight other categories, was announced on Oct. 3 as the basis for the War Department plan for Universal Military Training. Speaking before the Reserve Officers Association in Washington, D. C., on Nov. 22, Secretary Patterson said, among other things: "Had Congress in 1920 enacted the universal military training proposed, the United States would have had nine million trained reserves when Japan invaded Manchuria; ten million when Hitler rose to power; twelve million when Mussolini invaded Abyssinia; fourteen million when Germany invaded the Rhineland; sixteen million when the Nazis seized Poland. The world's warmongers would never have gone forward with their design for world rule had we had available an effective trained reserve. War would have been averted."

WOMEN'S ARMY CORPS

In March, the War Department offered overseas service to enlisted personnel of the WAC who wished to stay in service. Openings were made available in the European Theater for 600 women in five specialist categories. In July, plans were effected by the War Department to put the Women's Army Corps on an entirely volunteer basis as of Oct. 1, 1946. On July 24, Senator Elbert Thomas, Chairman of the Senate Military Affairs Committee, introduced into the

Senate the "WAC Integration Act of 1946." This established the Women's Army Corps in the Regular Army. The bill, as introduced, called for an initial Corps strength of 5,000 enlisted women and 500 officers, and established the maximum strength at two per cent of the Regular Army male strength authorized from time to time. In September, an 8-weeks' clerical course for WAC personnel was opened at the Quartermaster School, Camp Lee, Virginia.

WEATHER TESTS

In the thunderstorm season of the tropics, Army Air Forces conducted a series of intensive flight tests to provide fundamental data for flying through major weather hazards. Specially equipped Northrop P-61 Black Widows, wartime night fighters, flew around and through thunderstorms in the area around Orlando, Fla., collecting instrumental and photographic observations relating to cloud forms, cloud heights, turbulence, precipitation, lightning, and temperature.

Air Forces also worked to increase its six storm detection radar stations to 35 by the end of the year. In conjunction with the Signal Corps, the Air Weather Service of the Air Forces worked for the extension of aircraft weather reconnaissance and research in weather of the upper atmosphere. The use of rockets and guided missiles calls for special investigations of stratosphere weather and for special weather studies in such fields as electronic instruments, the use of electronic computers as an aid to forecasting, and special techniques for weather forecasting.

A complete "weather-station-on-wheels" mounted on a truck which can be driven to any location accessible to six-wheel drive trucks was perfected by the Signal Corps to answer the Army's demand for more and faster weather data. This weather station is known as Mobile Meteorological Station SCM-1.

On Sept. 1 there began the daily photo-transmission of weather maps from the Air Weather Service Central at Fairfield-Suisun Airport, California, to Hickam Field, Hawaii. For six hours of every day, isobars, isotherms, and all other special information incorporated on weather maps were sent by radio photo-transmission channel across more than 2,000 miles of the Pacific Ocean.

ADMINISTRATION OF VETERANS AFFAIRS

By Omar N. Bradley

General, U.S.A.; Administrator, Veterans Administration

ORGANIZATION

The Veterans Administration was established by the Act of July 3, 1930 (46 Stat. L, 1016) to unify the work of various Federal bureaus administering direct benefits to veterans and their beneficiaries. An independent Federal agency, it is headed by an Administrator of Veterans Affairs, and it entered the American scene at the beginning of a severe business depression. The effect of the depression on veterans was displayed in a number of ways.

Veterans were increasingly concerned with assuring themselves of the security of their benefits. For this reason, as well as for the reason of simplicity of administration, the Veterans Administration began to evaluate disabilities on a permanent basis for pension purposes.

Veterans of the First World War began to swell the Administration's rolls during depression days. However, except for former soldiers of the Regular Establishment, veterans of all wars other than the First World War were receiving monetary benefits from VA in decreasing numbers.

The uncertainties and hardships caused by the depression affected the mental and physical wellbeing of veterans, for during that era VA recorded an increasing volume of hospitalization and domiciliary care.

The 4,000,000 First World War veterans, many with physical handicaps, constituted a serious problem during the depression, because of their advancing age and because of the reluctance of commercial and industrial employers to hire older men. VA cooperated with the U. S. Employment Service of the Department of Labor and with other Federal agencies in efforts to find work for veterans.

Many turned to the Civilian Conservation Corps, established in 1933. VA determined veterans' eligibility and certified selectees to the War Department for enrollment in the Corps.

NATIONAL DEFENSE PHASE

The next phase of VA's history pertained to America's national defense program in the days before the Second World War. Because the Army was not fully prepared to meet the medical and hospital requirements of an enlarged military force, the Federal Board of Hospitalization adopted a plan approved by the President in September, 1940, that would utilize the highly trained medical staff and facilities of VA. This program called for VA relinquishing beds it had been using in Army and Navy hospitals, as they were needed by the armed forces; constructing additions to existing VA hospitals for military use; turning over beds in VA general hospitals in maneuver areas temporarily to the Army and Navy; and, in the event of a major national emergency, making available the facilities of VA to members of the armed forces who were injured or disabled in service and whose physical rehabilitation by the Army was not feasible.

These extra obligations, in addition to the agency's legal obligation to provide hospitalization for veterans discharged for disabilities incurred in service or in receipt of pensions, indicated the need for more beds through hospital construction.

However, construction was slowed down during the war because VA, not considered an essential war agency, received a low Federal priority rating; and, because it could not obtain higher priorities, it experienced difficulties obtaining labor and materials. Despite these handicaps, VA erected two new general medical and surgical hospitals during the war at Fort Howard in Baltimore, Md., with 389 standard beds, and at West Roxbury, Mass., with 316 standard beds. VA also increased its potential capacity by converting domiciliary homes to hospital use, by adding more beds to wards, and by additions and modifications to existing hospitals.

Even before war came to America, VA experienced a huge increase in its insurance business, brought about largely by Public Laws 801 and 861, 76th Congress (Oct. 8 and 17, 1940), necessitating a reorganization of its insurance procedures. During the first year of operation of the new laws (through October, 1941), more than 662,000 applications for National Service Life Insurance, representing about $2,285,000,000 were received from armed forces personnel. VA's Insurance and Finance Services were expanded to handle the increase.

SECOND WORLD WAR PHASE

New duties fell to VA, already burdened by increased activities and personnel shortages, when war finally came. Public Law 359, 77th Congress, (Dec. 19, 1941) permitted adjudication of war service claims for pension and insurance benefits and afforded hospitalization to discharged veterans disabled in line of duty. Public Laws 10 and 16, 78th Congress (March 17 and 24, 1943) provided for the rehabilitation of Second World War veterans. In addition, veterans of the Second World War were entitled to hospitalization, domiciliary care, and burial benefits on a parity with First World War veterans.

IMMEDIATE POST-WAR PHASE

Thoughts began to turn to the post-war readjustment of millions of veterans even while Allied forces still were fighting on battlefronts throughout the world. The result was the Servicemen's Readjustment Act of June 22, 1944 (Public Law 346, 78th Congress). The Act, generally known as the G. I. Bill, applied in general to any Second World War veteran discharged under conditions other than dishonorable after 90 days or more of service, or discharged by reason of an injury or disability incurred in line of duty. Broadly, it provided for educational and vocational training aid, guarantee by VA of loans for the purchase of homes and farms or for business purposes, payment of readjustment allowances to unemployed or self-employed veterans, and other benefits.

When Japan surrendered in the summer of 1945 the number of servicemen and women discharged from the armed forces increased with ever gathering momentum. Between October, 1945, and February, 1946, they returned to civilian life at an unprecedented rate of more than 1,000,000 each month. By Nov. 1, 1946, the number of veterans of all wars totaled 17,804,000; 13,853,000 had served in the Second World War.

To help the millions of Second World War veterans meet their readjustment problems with the benefits available to them by law, VA decentralized in 1945. In addition to the Central Office in Washington, D. C., 13 branch offices, each under a deputy administrator, were established to cover every part of the United States and its possessions. Under the jurisdiction of the branch offices (as of Sept. 1, 1946) were 327 field stations (regional and sub-regional offices, hospitals, homes, and centers) and 736 contact units. Included are VA offices in Puerto Rico Alaska, Hawaiian Islands, and Philippine Islands.

The number of full-time VA employees increased from 68,174 on Sept. 1, 1945, to 177,930 on Sept. 1, 1946. Of this latter figure, 152,783 were employed in branch offices and field offices. By comparison, there were 33,236 full-time employees on VA payrolls on June 30, 1937.

MEDICINE AND SURGERY ORGANIZATION

The urgent need for rapid expansion of all medical services for veterans, a result of the Second World War, prompted the reorganization and creation of a Department of Medicine and Surgery under a Chief Medical Director (Public Law 293, 79th Congress, Jan. 3, 1946). This law authorized the Administrator of Veterans Affairs to employ without regard to the civil service Classification Act of 1923, as amended, physicians, dentists, nurses and other professional and non-professional personnel at such pay rates as he prescribes. The bill also authorized the Administrator to establish residencies for physicians in VA hospitals and clinics.

In connection with the physician training program, almost 900 consultants and attending physicians and almost 600 residents and physicians in residency training had been appointed by June 30, 1946. Sites for new VA hospitals were being chosen near medical centers so that VA might realize the benefits of affiliation and close liaison with outstanding professional men in these centers.

There were 114 VA hospitals by Sept. 1, 1946, with 88,783 authorized standard beds, and nearly 13,000 beds allotted by other agencies, in addition to over 9,000 beds available for service-connected cases through contracts with state and civil hospitals.

MEDICAL SERVICES

As of Sept. 1, 1946, VA has the following medical services to aid veterans:

Neuropsychiatric Service.—Approximately 55 per cent of all hospitalized veterans are NP cases, for whom 33 hospitals now exist, with two under construction, 11 more to be built, and one to be acquired from the Navy. In addition, patients in general medical and surgical hospitals will be treated in mental convalescent centers or special treatment centers. Mental hygiene clinics are treating those not needing hospitalization, in an effort to practice preventative medicine.

Tuberculosis Service.—VA operates 14 tuberculosis hospitals and 40 tuberculosis departments in general and neuropsychiatric hospitals and treats some 8,800 patients. To insure early diagnosis and prompt treatment of tuberculosis among younger veterans, chest x-rays are taken of each hospitalized patient at the time of admission and each out-patient at the time of scheduled examination. Periodic surveys of all general and neuropsychiatric patients at the end of each 12 months' residence in hospitals have been authorized.

Surgery.—Surgical facilities are provided in all VA hospitals. These comprise a surgical operating suite and necessary trained personnel to operate it. They are available continuously, 24 hours a day, seven days a week. The surgical service includes general surgery, orthopedic surgery, urology, ophthalmology, otolaryngology, plastic surgery, thoracic surgery, neurosurgery, gynecology, radiology, and anesthesiology.

General Medicine.—There are 67 general medical and surgical hospitals. Treatment for medical conditions also is furnished in tuberculosis and neuropsychiatric hospitals. In addition, out-patient treatment for service-connected medical conditions, or conditions aggravating a service-connected condition, is being rendered in VA regional and sub-regional offices.

Prosthetic Service.—VA's program for prosthetic appliances has been organized to provide efficient service and maximum benefits to veterans requiring artificial aids. VA will buy the veteran any appliance he chooses, and a nationwide service system is being established so amputees may obtain immediate repair service, up to $35, with VA paying the bill.

Medical Rehabilitation Service.—As the medical and surgical care of patients is carried out, an intensive course in medical rehabilitation is being given to veterans. Disabled veterans must learn how to walk up and down steps; patients who wish to further their education can take part in a complete academic program; veterans can explore vocational possibilities for post-hospitalization work while still patients.

Out-Patient and Dental Service.—In order to render prompt and efficient service to eligible veterans in need of treatment on an out-patient basis, agreements or contracts had already been arranged with 21 statewide medical groups by the end of September, 1946. It is anticipated that an agreement, together with a fee schedule, will be worked out for each state. After the veteran has contacted the VA representative, and received approval, he may select his own doctor in his community, if the latter is a member of the medical association plan, and VA will pay for the treatment. VA also has contracts with mental hygiene clinics, out-patient departments of hospitals, general medical and surgical clinics for treating out-patients. These agreements supplement the work of VA's own fulltime clinics in operation in regional and sub-regional offices and the out-patient departments of its own hospitals.

Of the 346,036 veterans admitted to VA hospitals during the fiscal year 1946, 67.6 per cent were Second World War veterans, 28.9 per cent First World War veterans, and 3.5 per cent were veterans of other wars and men discharged or retired from all branches of the regular military service. General medical and surgical cases constituted 80.3 per cent of the total; pulmonary tuberculosis cases, 4.4 per cent; and neuropsychiatric, 15.3 per cent. Sixteen per cent of all admissions were for service-connected disabilities; that is, directly or presumptively incurred in or aggravated by military service.

VA HOMES

To be admitted to a VA home, a patient must have a condition essentially chronic in character, not susceptible of cure or decided improvement by hospital treatment, and must be incapacitated from earning a living for a prospective period. As of Sept. 1, 1946, there were 12 homes with a capacity of 15,428 authorized beds; at the beginning of the fiscal year 1937 there were 12 homes with 18,756 beds. The reduction can be accounted for by VA's greater need for hospital beds, which resulted in the conversion of some beds in homes to hospital purposes. Almost 12,000 veterans were receiving home care on Sept. 1, 1946. Admissions during the year totaled 14,056. Of this total, 2,445 were Second World War veterans, 10,395 served in the First World War, and 1,216 were other eligible veterans.

INSURANCE

National Service Life Insurance was authorized by the National Service Life Insurance Act of 1940 (Public Law 801, 76th Congress) for all members of the armed forces ordered to active duty for more than 30 days. It could be obtained in amounts of not less than $1,000 or more than $10,000 in multiples of $500. The passage of this law terminated the right of persons entering the armed forces after Oct. 8, 1940, to purchase U. S. Government Life Insurance unless they otherwise were eligible as veterans of the First World War.

National Service Life Insurance originally was issued on the Five-Year Level Premium Plan, which means that premiums paid at a fixed rate were for insurance protection alone; the policies do not have cash, loan, paid-up, or extended insurance values. This form provides the maximum amount of temporary protection at the lowest cost. The term period for all NSLI insurance issued prior to Jan. 1, 1946, was extended three years by Public Law 118, 79th Congress (July 2, 1946). Therefore, those policies may be continued in their original form for eight years from the date of issue. They need not be converted to a permanent plan before the expiration of that period. Policies issued after Dec. 31, 1945, must be converted within five years.

The Insurance Act of 1946 (Public Law 589, 79th Congress: Aug. 1, 1946) liberalized the provisions of the National Service Life Insurance Act of 1940, as amended, to meet the needs of veterans under peacetime conditions. Restrictions were removed from the choice of beneficiaries; three endowment plans were added to the ordinary life, 20-payment life and 30-payment life already authorized; provision was made for additional optional settlements; and protection against total disability for six months or more was made available in a separate policy provision for an extra premium and compliance with health requirements.

Below are three typical age groups and the premiums that must be paid for various types of policies:

Type of Policy	Monthly Premium per $1,000		
	Age 25	Age 30	Age 35
5-year level plan	$0.67	$0.71	$0.76
Ordinary life	1.37	1.56	1.80
30-payment life	1.67	1.83	2.03
20-payment life	2.12	2.31	2.53
Endowment at age 65	1.67	1.96	2.37
Endowment at age 60	1.89	2.27	2.82
20-year endowment	3.48	3.51	3.56

The Armed Forces Leave Act of 1946 (Public Law 704, 79th Congress; Aug. 9, 1946) authorizes VA to accept "terminal leave" bonds of former enlisted personnel, in lieu of cash, for the payment of premiums on all forms of Government Life Insurance.

VA's life insurance business is the largest mutual insurance system in the world. Within the last six years it has written more than 18,000,000 National Service Life Insurance policies having a total face value of nearly $150,000,000,000 (B). By Sept. 1, 1946, almost one-third of this still was in force, or an estimated 6,195,000 policies for $38,615,520,000. As a direct result of war casualties and other deaths of more than 369,000 insured veterans, monthly installments were being paid to beneficiaries on more than $3,400,000,000 of insurance awarded on death claims up to the end of August, 1946.

U. S. Government Life Insurance.—Originally known as War Risk Insurance in the days of the First World War, it was authorized by amendment to the War Risk Insurance Act (Public Law 90, 65th Congress: Oct. 6, 1917), to enable those who served in the First World War to purchase insurance from the Government in amounts of not less than $1,000 or more than $10,000, in multiples of $500. About 4,500,000 persons applied for this insurance between Oct. 6, 1917, and Nov. 11, 1918, for an amount of nearly $40,000,000,000 (B). Under provisions of the original act, conversion from term to permanent United States Government Life Insurance could not be made until after the close of the First World War. As of Sept. 1, 1946, there were in force 547,470 United States Government Life Insurance policies representing $2,373,366,156.

Civil Relief.—Article IV of the Soldiers' and Sailors' Civil Relief Act of 1940 (Public Law 861, 76th Congress), as amended by Public Law 732, 77th Congress, provided a method whereby the Government under certain conditions, upon application by the insured, guaranteed commercial life insurance policies against lapse for the non-payment of premiums while the insured was in active service and for two years after discharge under certain conditions. By Sept. 1, 1946, approved applications under this provision totaled 89,048 for an amount of $221,923,103.

EDUCATION AND TRAINING

Education and training for Second World War veterans is authorized by two laws: Public Law 16, 78th Congress (as amended by Public Laws 346, 78th Congress, and 268, 79th Congress) pertains to eligible disabled veterans with handicaps removable by training with the purpose of restoring employability. Title II of the Servicemen's Readjustment Act of 1944 (Public Law 346, 78th Congress), amended by Public Law 679, 79th Congress, pertains to eligible able-bodied veterans.

The two laws differ greatly, although both offer education and training at the expense of the Government, with tuition, supplies, and in many cases subsistence allowance provided. Public Law 16 gives VA a high degree of responsibility for the guidance and welfare of the disabled veteran, while Public Law 346 keeps VA's supervisory responsibility at a minimum.

Veterans with service-incurred or aggravated disabilities, who need training to restore employability, can enroll under Public Law 16. They must have extensive, scientific advisement and guidance by VA trained personnel in selecting their courses and throughout their training. While in training, and for two months after employability is determined, they receive a subsistence allowance of $65 a month if without dependents or $90 a month with dependents, in addition to their disability pensions. If pension plus allowance do not total $105, if a veteran is without dependents, or $115, if he has dependents, an additional sum is paid to make up the difference. The sum is increased further if there is more than one dependent. If a veteran is enrolled in on-the-job training, he retains whatever wages are paid to him, but if his salary plus subsistence allowance surpass the wage of a beginning trained journeyman, VA will cut his subsistence allowance proportionately.

Able-bodied veterans can choose their own course of study or job training under Public Law 346. The place where they enroll must have the approval of the appropriate state approving agency. The amount of training or education to which a veteran is entitled depends upon his length of active service and ranges up to 48 months. If he enrolls in an educational institution, VA will pay his tuition, fees, book and supply costs up to a $500-a-year maximum. If he takes a full-time course, he will receive a $65 a month subsistence allowance if he has no dependents, or $90 a month with dependents. If he takes on-the-job training, he retains whatever wages are paid to him, but if his salary plus subsistence allowance surpass the wage of a beginning trained journeyman, VA will cut his subsistence allowance proportionately. Whether he is earning wages on the job, or in an outside work while in school, his subsistence allowance also will be adjusted so that the total of the allowance plus his training wages does not exceed $175 a month if he has no dependents, or $200 a month if he has dependents.

By Sept. 1, 1946, 50,394 disabled veterans were in educational institutions under Public Law 16, and 54,647 were taking on-the-job training. At the same time, 672,668 veterans were in educational institutions under Public Law 346, and 471,313 were taking on-the-job training.

LOANS

Title III of Public Law 346, 78th Congress, amended by Public Law 268, 79th Congress, made provisions, within certain limitations, for the guarantee of loans or insurance of credit through private lending institutions to Second World War veterans who desired to purchase or construct homes, farms, and business property.

Amount of guarantee may not exceed 50 per cent of the loan, or a maximum of $4,000 on real estate and $2,000 on non-real estate loans. If a veteran receives loans of both types, the maximum guarantee is prorated on these amounts. Farm realty loans must be paid off within 40 years, other real estate loans within 25 years, and non-real estate loans within 10 years.

As of Sept. 1, 1946, 293,931 veterans received loans amounting to $1,429,331,142. VA guaranteed and insured $657,958,220 of this amount. Over 90 per cent of veterans—or 257,471—borrowed $1,316,533,848 to buy or build homes; 26,351 borrowed $78,919,887 for business purposes; and 10,109 borrowed $33,877,406 for farms and farm equipment. At the same time, 2,462 G. I. loans had been repaid in full, relieving VA of commitments amounting to $3,405,848. Only 210 veterans defaulted on their loans, costing VA but $181,254 in net claims paid to lending institutions. The bulk of defaults—173—were for business loans. Home loans accounted for 26 and farm loans for 11.

READJUSTMENT ALLOWANCES

The program of readjustment allowances, in operation under Title V, Public Law 346, 78th Congress, provides financial assistance for eligible veterans during periods of unemployment, or when self-employed and earning less than $100 per month. For the first 90 days of active service since Sept. 16, 1940, and prior to the end of the war, a veteran is entitled to 24 weeks of allowances; for each subsequent month during that period, to four additional weeks, up to a maximum of 52 weeks. The program is administered by State Unemployment Compensation Commissions under individual contracts with VA, which reimburses them both for the amounts they pay to veterans and administrative expenses.

During the week ended Sept. 1, 1946, 1,649,820 veterans were drawing readjustment allowances for unemployment. During that time, State Unemployment Compensation Offices paid out $31,863,150. For the month of August, 332,519 self-employed veterans drew $34,281,321 in readjustment allowances. About 85 per cent of the self-employed were farmers.

PENSIONS AND COMPENSATION

Laws enacted during the years 1937 and 1946 considerably increased the rates of pension and compensation, and liberalized the conditions of entitlement to permit benefits to additional classes of dependents. Death pensions and compensations can be paid to the widows, children, and dependent parents of veterans who served in the Mexican, Civil, and Indian Wars, Spanish-American War, Boxer Rebellion, Philippine Insurrection, and the First and Second World Wars, as well as to dependents of those who served during peacetime.

At the end of the fiscal year 1946 (June 30), 36 per cent of the death pension and compensation benefits paid by VA were based on Second World War service; 42 per cent were for First World War service; 3 per cent for peacetime service; and 19 per cent for service in the Spanish-American and prior wars. Disbursements for compensation and pension from July 1, 1945, to June 30, 1946, totaled $1,254,000,000 (B), of which $732,000,000 was for Second World War service; $346,000,000 for First World War service; $24,000,000 for service in the Regular Establishment; and $152,000,000 for service in the Spanish-American and previous wars. On June 30, 1946, compensation and pension at an average monthly rate of $59.33 were being paid to the dependents of 180.938 veterans of the Second World War.

GUARDIANSHIP

VA's guardianship load rose from 92,648 wards on Aug. 30, 1945, to 127,106 wards one year later. Of the 127,106 wards 84.739 were entitled to benefits because of service by veterans of the First World War and other wars; and 42,367 wards were entitled to benefits on account of service by veterans of the Second World War.

CONSTRUCTION, SUPPLY AND REAL ESTATE

The Assistant Administrator for Construction, Supply and Real Estate is charged with the construction and maintenance of all veterans' hospitals, attendants' quarters, etc., equipping and supplying these facilities, real estate activities, and other related responsibilities. Since VA will have about 20,000,000 potential applicants for hospital service, it has embarked upon the world's greatest hospital construction program, a program which is expected to cost nearly $1,000,000,000 and to provide about 89 new hospitals and a number of additions to existing hospitals, located near medical centers as far as possible. Construction Service probably will turn over most of the new hospital construction projects to the U. S. Army Corps of Engineers for supervision of design and construction. The Supply Service purchases millions of dollars worth of supplies and equipment annually for VA hospitals, homes, and offices. The Real Estate Service purchases all sites for new hospitals and homes, and procures all space required by VA for offices and storage.

CONTACT AND SERVICES

Contact representatives are located in populated areas throughout the United States, and insular and overseas possessions, to assist and advise veterans, their dependents and beneficiaries of their rights and benefits. Over 2,000,000 personal contacts were made with veterans and their beneficiaries during August, 1946, alone.

FINANCE

Under the jurisdiction of an Assistant Administrator for Finance are activities responsible for making and accounting for payments, benefits and otherwise, which VA estimates will total well over $4,000,000,000 in the fiscal year beginning July 1, 1946. Included are the functions involving the guaranty of loans and the payment of allowances to veterans during unemployment.

BOARD OF VETERANS' APPEAL

It is the function of this Board to render final decisions on all cases appealed to the Administrator of Veterans' Affairs, wherein the claimant has been denied entitlement to a benefit for which he has made claim.

SOLICITOR

The responsibility of the Solicitor is the interpretation or construction of the several thousand statutes for the administration of VA. VA's Guardianship Service falls under the jurisdiction of this office.

NAVAL CONSTRUCTION AND EQUIPMENT

By John C. Niedermair
Bureau of Ships, Navy Department

PRESENT AND FUTURE STATUS OF SUBMARINES

Much of the research and speculation concerning the nature of navies of the atomic age is focused today on the submarine and its chances of promotion to "capital ship" rank as the aircraft carrier was in the Second World War. With some of its traditional weaknesses overcome and bolstered by the development of revolutionary weapons and means of propulsion, the sub-surface fighting craft has a spotlighted position in new military concepts being shaped in the light of atomic energy and the magic of electronics.

In immediate prospect is emergence of the "true" submarine, a craft capable of almost continuous submerged operation at high rates of speed. Such a submarine was blueprinted by the Germans before their surrender in 1945 after it became apparent that the older types—essentially submersible torpedo boats which dived only in emergencies—had been stripped of their effectiveness by Allied sea-air power buttressed by improved weapons and far-ranging electronic detection devices.

U. S. Navy designers, engineers and scientists are studying German developments, with an eye to strengthening the submarine's orthodox role of raider and scout. At the same time, Navy officers are considering the possibility of radical changes in the functions of the submarine. Launchers of rockets and guided missiles or carriers of aircraft operating with relative immunity under the surface of the sea may be the warships of the future. The use of atomic-energy propulsion for submarines is also envisioned.

THE PATTERN OF MODERN NAVAL OPERATIONS

Discussing the pattern of modern naval operations, Vice Admiral Arthur W. Radford, USN, DCNO (Air), declared:

"It is true that the specific weapons utilized by a navy change from time to time. We once used armed boarding-parties . . . We no longer depend on the high-caliber guns of battleships to hit enemy vessels at close range, when we can send the mobile and far reaching ordnance of carrier airplanes against any target that threatens our control of the seas. In the future we may turn to the submarine as our primary naval weapon.

"Who knows but that the strides we have made in antiaircraft defense—split-second fire control, proximity fuses, long-range, early-warning radar, guided missiles, and so on—may some day reach a stage of development where they render the piloted military aircraft obsolete?

"If this day comes, our undersea experts foresee a dependence on long-range submarines, capable of submergence for months, whose ability to fire rockets and guided missiles without surfacing will allow them to stand off any coastal target in the world and destroy it."

Similar ideas were expressed by Rear Admiral Harold G. Bowen, chief of the Navy's Office of Research and Inventions, who cited "a growing school of thought which visualizes the submarine as one of our most promising naval craft, if the time comes when atomic warfare forces us beneath the surfaces of the sea."

Rear Admiral Charles W. Styer, USN, ACNO (Operations), recently asserted that "submarines are certain to play an increasingly important part in our concept of national defense. Offensively, defensively and mechanically the submarine seems well adapted to a leading role in the navy of the future."

SUBMARINE TRENDS

Two coincidental trends are influencing the future of the submarine, 322 years after its debut as an underwater rowboat in the Thames River of Great Britain; (1) recognition of the growing need of a navy capable of extensive sub-surface operation, and (2) development of a craft meeting the requirements of extensive sub-surface operation.

During the half-century of its modern development the submarine became one of the most effective instruments navies have had in utilizing the ancient military devices of stealth and deception. Submarines were the only combat craft which could hide beneath the surface of the ocean, before, after, and even during an attack. Underwater operation, however, entailed sacrifices. When a submarine submerged, its speed was reduced to a maximum under 10 knots, its cruising range extremely limited. For underwater propulsion it had to rely upon electricity from batteries—a low-speed method making it impossible to leave an attack area in a hurry unless it came to the surface, in which case it was subject to heavy assault from surface vessels. Its underwater vulnerability likewise resulted from sonar and sonobuoys, the underwater sound detecting devices developed to a high state of efficiency in the recent war.

It was necessary for the submarine to spend considerable time on the surface, to charge batteries or to attain the speed—available only on the surface—required to reach target sectors. Radar and aircraft made even this kind of operation extremely hazardous. These handicaps the Germans sought to overcome in the final months of the Second World War by designing a submarine which seldom had to surface, and could travel submerged for long periods of time with an emergency speed of 24 knots in reserve. They claimed these qualities for their Type 26 U-Boat, the first "true" submarine. When the European war ended, the Germans had designed the model and partially constructed a hull.

Type 26 was to have three power systems—batteries for slow underwater operation, a Diesel engine for cruising at periscope depth and a revolutionary Walter hydrogen-peroxide engine for high emergency speeds. The latter type of engine and the schnorchel, the breathing tube which permitted operation of Diesels while cruising submerged, were the Germans' answers to the need of a highspeed method of submerged propulsion which would not exhaust the precious oxygen supply of a submarine.

The Walter engine, developed originally in pre-war years by a German engineer whose name it bears, contains its own oxygen supply. Hydrogen-peroxide is broken down in a chamber into water (in the form of steam) and oxygen, which are then fed into a combustion chamber along with fuel oil. From the combustion chamber steam pressure is directed onto turbines driving the shaft.

The engine was believed powerful enough to provide speeds up to 24 knots submerged, but it had defects. It would have been possible to maintain the maximum rate for only six hours, and after that period the Walter engine could not be used again until the submarine returned to base for more fuel. The cost of operation would have been almost prohibitive. At the prevailing rate of costs in the United States, the expense of a 6-hour run at 24 knots would exceed $100,000.

Navy engineers now are studying a Walter engine, which was removed from a German type 17 U-boat. This model, a forerunner of the Type 26, actually put to sea and reached a top submerged speed of 24 knots, but Type 17 was small, carrying only two torpedoes. The Walter engine built for the Type 26 hull is now in Britain.

ATOMIC ENERGY IN PROPULSION

More significant than the Walter engine in the future of the submarine are the possibilities of atomic energy. The prospect of this revolution in propulsion was pointed up by Admiral Styer when he said:

"The development of compact, efficient atomic energy plants in our submarines would give the undersea craft high speed while submerged and almost unlimited cruising range With this atomic firebox, none of a vessel's oxygen supply would be used up by the propulsion machinery, and the problem of expelling exhaust gases would be eliminated. Add to this an armament of rockets or guided missiles with atomic warheads, and you have a strong, offensive weapon that is itself relatively secure against atom bombs and detection by radar."

Admiral Radford listed atomic energy as one of the "three potentials" giving submarines "a great military future." He said:

"When submerged they cannot be detected at a distance because sea water still repels electronic waves. When submerged they are relatively immune to bombing attacks. Because of their compartmentation, and the protection against radiation afforded by surrounding water, they may well be the first craft in which atomic propulsion can be efficiently employed."

Navy submariners and anti-submarine warfare experts have been making test runs and experimenting with two Type 21 German U-boats, one being based at Key West, Fla. and the other at Portsmouth, N. H. One hundred and twenty of these were built but none was used by the Nazis in a war operation.

Although designed for installation of the hydrogen-peroxide engine, the Type 21 boats actually are powered with extra-large batteries, and diesels, and are equipped with the schnorchel. Their submerged speed is 15 to 16.43 knots. Here are some comparisons of the Type 26 and Type 21 U-boats:

	Type 26	Type 21
Surface Displacement	900	1600
Torpedo Capacity	10	20
Crew	32	57
Designed Maximum Submergence Depth	400 ft.	360 ft.

These types, and the schnorchel device which appeared in 1944 when the Nazi U-boat fleet went "underground" to dodge the Allied antisubmarine forces, are under the close scrutiny of Navy's submarine men.

SUBMARINES AS AIRCRAFT CARRIERS

The submarine's future as an aircraft carrier is problematical. Most naval powers have experimented with such models in the past, but because of their great weight and dangerously slow diving time they were not a success. In the Second World War, the Free French used one which carried one plane in a hangar on deck and two 8-inch guns, but it was lost in 1942.

The Japanese, who were behind the Germans in submarine design and used the undersea craft mainly for fleet operations, built some plane-carrying submarines during the war. The I-400 class, of which three were constructed, were the largest submarines yet designed, displacing 4,663 tons on the surface. They carried three bombing planes, and had speeds of about 20 knots surfaced and seven knots submerged.

SUBMARINE ARMAMENT

In addition to the prospect of rockets, atomic projectiles, and other guided missiles as armament for submarines, the traditional undersea weapon—the torpedo—is due for further refinement. Discussing the German acoustic torpedo, which homed onto the noise of ship's propellers, Admiral Bowen declared:

"We not only have similar ones, but have gone even farther. Roughly, we can get 40 knots with a steam torpedo, and up to 60 knots with refinement of hydrogen-peroxide drive developed by the Germans. But there is a probable limit of 75 knots on propeller-driven torpedoes."

HISTORICAL DEVELOPMENT OF THE SUBMARINE

Behind the submarine of today and its potentialities for the future lie more than 300 years of development. Before man actually attempted to sail beneath the sea, he imagined the feat.

A Greek tale of 300 B.C. detailed attempts of an imaginary enemy to equip men with diving gear enabling them to approach anchored ships and chop holes in the hulls. Leonardo da Vinci's notebooks show that he had conceived of the submarine, along with the flying machine in the 15th century. Jules Verne was fanciful about submarines, but by the time he published *Twenty Thousand Leagues Under the Sea* in 1870, he had had some working models on which to base his fancy.

The English considered trying submersibles to help stave off the Spanish Armada, but nothing came of it until numerous undersea boats were patented in the early 17th century. In 1624, Cornelius Van Drebbel, a Dutch engineer, constructed a submarine under the protection and influence of the Royal Navy. With Drebbel rowing and King James I as passenger, the boat made a 2-mile trip across the Thames in two hours, at a depth of 15 feet. The early submersibles were not taken seriously as fighting ships because there was no feasible armament. David Bushness, a lieutenant-captain of sappers and miners in the Continental army of the American Revolution, was probably the first man to use a submarine in war. With his boat he attempted to sink a British warship in New York harbor in 1775. His plan of attack: Submerge under cover of darkness (by taking on water ballast and thrusting downward with a vertical screw), approach the ship, bore a hole in its hull, attach a time bomb and retreat. There was one thing wrong —copper sheathing made it impossible to penetrate the hull.

Robert Fulton tried his hand at submarines before turning to the steamboat, but failed to interest Napoleon, the British, or the United States. There was still no practical armament.

In the American Civil War, the Confederate forces sought to compensate for their lack of a surface navy by constructing submarines to break the blockade. The attack was simple, although it had earmarks of a suicide mission. A contact mine was attached to a long spar projecting from the bow of the submarine. The crew was to make a submerged approach, ram the target and blow it up by explosion of the mine.

The Federal ship *Housatonic* was sunk by this method in 1864 in Charleston harbor, but the submarine was destroyed and most of the crew perished. The attacker, the Confederate submarine *Hundley,* thus became the first vessel built as a submarine to sink an enemy ship in action, although actually it was surfaced at the time.

The experience of the *Hundley* emphasized the problem of suitable armament for the submarine. In the 1870s, Robert Whitehead in Austria developed a self-propelling torpedo powered by compressed air. Surface torpedo boats at first were used to carry the new weapon, but the need was soon seen for a submersible torpedo carrier.

Late in the century the leading nations began adding submersibles to their fleets. A boat designed by John P. Holland, 100-ton, 50-foot submersible, was commissioned as the first U. S. Navy submarine in 1896.

The early submarines were propelled electrically submerged, and by steam or gasoline engines on the surface, but it was not until the adaptation of diesel engines in 1900-1910, and development of the periscope and gyro compass that the submarine began to show promise of becoming a long-range, quick-diving, elusive weapon.

In the early months of the First World War, the submarine was not highly regarded. It was small and frail compared with other ships, its primary function being reconnaissance and patrol.

An awakening came, however, in a chance encounter. The German boat U-9 on a scouting mission sank a British cruiser in the North Sea, and then stood by to destroy two more coming to the scene to pick up survivors. The submarine's record as a deadly weapon of war dated from that incident.

HALT IN SHIPBUILDING

Construction work on 37 ships, consisting of 30 combatant ships, six auxiliary vessels, and one landing ship, was stopped in January, 1946. This action was taken after the Navy Department, in conjunction with the Office of War Mobilization and Reconversion and the Bureau of the Budget, made a study to determine what Navy budget reductions might be included in the funds cutback bill to be introduced in Congress. Future naval vessel requirements were restudied and were reduced in every case where the cost of early completion of the vessels could not be justified. It is estimated the Government will save approximately $140,000,000 by the cancellation order after termination costs have been paid.

President Truman proposed Congressional repeal of $2,826,880,536 in appropriations and contract authorizations for the Navy. Of this amount, $1,677,260,536 is mainly the result of cutbacks in procurement and shipbuilding, and $1,149,620,000 represents appropriations not needed in the fiscal year of 1946, but which will have to be restored in future years to liquidate contract authorizations. The President also proposed cuts of $1,420,576,472 for the Army and of $1,503,971,475 for the civil agencies.

An earlier reduction in the shipbuilding program was accomplished in 1945 when 56 combatant ships, 39 auxiliary vessels, and 160 district craft and auxiliaries were canceled, resulting in a total estimated net savings of approximately $1,200,000,000.

Types and number of vessels affected by the January order were: Light aircraft carrier, 1; escort carriers, 2; heavy cruiser, 1; light cruiser, 1; destroyers, 13; destroyer escorts, 4; submarines, 8; destroyer tenders, 3; barracks ships, 2; salvage vessel, 1; LST, 1. Fifteen ships which had reached a comparatively advanced stage of construction were not declared surplus but would be accepted by the Government and reserved in a laid-up status for possible future completion, either as originally intended or for experimental purposes: the CVL, 2 CVEs, the CL, 3 DDs, 3 SSs, 2 ADs, 2 APLs and the ARS.

SEA POWER THE NATION'S FIRST LINE OF DEFENSE

In this age of atomic bombs and other revolutionary weapons, the Navy is still the nation's first line of defense. Secretary of the Navy James Forrestal and Fleet Admiral Chester W. Nimitz made this point before the Senate Naval Affairs Committee in a frank appraisal of the Navy's future role. Squarely facing the issue by bringing up the subject themselves, they made two major points:

Far-flung naval forces and bases offer the best defense against an atomic warfare assault on the United States.

Until the day wars are waged without transportation of men or materials, or when such transportation can be accomplished solely by air—and neither of these events lies within the realm of "reasonable expectations"—the Navy will be needed.

In the meantime, for a "transition period" covering "the next few years" —years in which a reasonable prospect of enduring peace will be the goal rather than an accomplished fact—it would be an unwise gamble to maintain anything less than the 500,000-man Navy envisaged in the Navy's post-war program, the Senators were told.

In the process of informing the committee of what the best professional opinion considers to be the minimum naval force requirements in the light of immediately existing world conditions, the Secretary, the Chief of Naval Operations, and four other high-ranking representatives of the Navy's top command presented a detailed picture of the proposed postwar Navy. Major subjects discussed included bases, ships, submarines, and aviation.

BASES

The Navy plans to maintain 53 advanced bases—33 in the Pacific and 20 in the Atlantic. In the Pacific, the essentials are the main naval base at

Pearl Harbor, a major operating base in the Guam-Saipan area, secondary bases in the Ryukyus and the Philippines, and the use of Manus when required, Vice Admiral Forrest P. Sherman DCNO (Operations) told the committee. Plans cover bases at Samoa, Midway, and at Adak, Kodiak, Dutch Harbor, and Attu in the Aleutians, with a submarine base at Balboa at the Pacific end of the Panama Canal.

In the Atlantic-Caribbean areas, the main operating base would be at Roosevelt Roads in the Puerto Rico area, with secondary operating bases at Guantanamo, Trinidad, San Juan, Coco Solo, Bermuda, and Argentia in Newfoundland, and a submarine base at St. Thomas, Virgin Islands. A minimum number of the bases in the Atlantic and Pacific will be fully operational, some in a reduced operational status, some in a maintenance category, and others in a caretaker status. Air bases and air strips will be maintained at strategic points.

SHIPS

The Navy plans to maintain 70 to 80 per cent of the wartime complements aboard the 319 major combatant ships allocated to the post-war Active Fleet. The 73 major combatant ships of the Ready Reserve will have 20 to 30 per cent of their normal wartime complements, and any one ship of this fleet could join the Active Fleet one to three months after receipt of personnel. The Inactive Fleet of 651 ships would require about nine months for total reactivation, but any one ship could be put in the Active Reserve Fleets in about three months.

The United States entered the war with seven aircraft carriers. The post-war Navy will have 13 active, five in reserve, and 19 inactive. At the start of the war, there was one escort carrier—a prototype. Eighty were used during the war, and the post-war plan is to have 13 active and 66 inactive. The battleship force grew from 17 to 24 during the war, and post-war there will be four active, six in reserve, and eight inactive. Cruisers went from 37 to 93; 28 will be active, 18 in reserve, and 36 inactive. Destroyers increased from 172 to 445; 135 will be active, 40 in reserve, and 191 inactive. Destroyer escorts increased from none to 363; 36 will be active, four in reserve, 258 inactive.

SUBMARINES

The United States entered the war with 112 submarines, and built up to 259, plans to have 90 active, and 109 inactive in the post-war Fleet. Admiral Nimitz, discussing the significance of developments in atomic warfare, declared at one point the submarine "may become the most successful vehicle for carrying atomic weapons to within short distances of coastal targets and for ensuring accuracy in the use of guided missiles."

"The submarine," Admiral Nimitz said, "may be expected to have continued and increased employment in the future. At sea it is relatively immune to atomic bombing and also to radar detection."

AVIATION

Vice Admiral A. W. Radford, DCNO (Air) told the Senate Naval Affairs Committee that carrier aircraft would total 2,180 planes, with 114 others allocated to cruisers and battleships. Fleet air wings will have 471 planes, 297 of them patrol land planes and 174 seaplanes and amphibians. Marine aviation will include 240 escort carrier aircraft and 726 support aircraft.

Plans also call for 181 target aircraft, 117 transports, one squadron of eight blimps with four in reserve, 1,350 primary and intermediate trainers, 1,200 type and operational trainers, 400 special technical trainers and utility aircraft, 450 experimental aircraft, 450 for air base utility, administration and service training, 126 for Marine utility purposes, and 4,002 planes in reserve.

SHIPS OF THE FUTURE

Lessons of war and a glimpse of things to come became evident as the Navy wound up its vast wartime shipbuilding program and started into the transition building phase which someday will produce the Navy of the future.

Many nearly completed combatant craft will be joining the Fleet soon, some of them nearly exact prototypes of wartime ships, a few of them with such innovations as radically new ordnance gear that would have been the dream of any gunnery officer who beat off *kamikazes* in the western Pacific. Two hulls—*USS Kentucky* (BB66) and *USS Hawaii* (CB3), as has already been announced, are being delayed pending design changes which will make them the world's first major warships equipped to launch guided missiles.

CRUISER CONSTRUCTION

Most interesting of the ships under construction—with the exception of *Kentucky* and *Hawaii,* whose completion is still distant, are five new cruisers, two lights and three heavies. They are *USS Worcester* and *Roanoke,* CLs 144 and 145 respectively. and *USS Des Moines, Salem,* and *Newport News,* CAs 134, 139 and 148, in that order.

The *Worcesters* are a new light cruiser class, and they reflect wartime experience from keel to truck. They're the first really new light cruisers since the *Clevelands,* although some of the later members of that class were modified to single-stack jobs. Little has been released on the *Worcesters* beyond the fact that they will displace 14,700 tons, against the *Cleveland's* rated 10,000-ton displacement. The new light cruisers thus follow a general trend in naval architecture toward ever bigger, heavier ships.

The big modification in the *Worcester* and the *Roanoke,* however, will be the batteries. The ships will carry 12 6-inch dual purpose rapid-firing guns in twin turrets—three turrets forward and three aft. They will have no 5-inch AA battery, but will depend upon an array of smaller AA weapons for close-in work against such planes as the 6-inchers may have failed to keep at a respectful distance.

The new *Des Moines* heavy class is just as big a departure in that type. Following the trend, they are huge 17,000 tonners, compared to the 13,600 tons of the previous *Baltimore* class.

The *Salem* and *Newport News* of this class were chosen by the Navy for experiments in air conditioning.

The *Des Moines, Salem,* and *Newport News* will carry a new rapid-firing 8-inch gun—nine of them in three turrets.

The new 6-inch batteries on the *Worcesters* and the 8-inch on the *Des Moines* are automatic from ammunition handling rooms to the gun muzzles, including ejection of the cartridge cases from the mounts. Powder bags have been abandoned in favor of cases, to achieve the desired rapid firing rate. For the first time in the U. S. Navy, and very probably in all navies, no ammunition handlers will be required in the turrets of 6- and 8-inch batteries. The design represents ammunition-handling features that were independently developed in a number of mounts, both U. S. and foreign.

Rapid rates of fire in both 6- and 8-inch mounts were made possible by extensive mechanization requiring a much greater use of electric and hydraulic control, servo and power systems than has been employed in any ordnance heretofore. To insure satisfactory performance of the great amount of specialized equipment, pilot models have been tested through 100,000 cycles, testing exceeding that to which any previous ordnance gear was subjected.

The 8-inch mount features for each gun a control and trouble-indicator panel which shows immediately the position of the ammunition in the entire loading system from magazine to breech, and the exact location of any type of electrical failure in the system. Advantage of this at-a-glance trouble-shooting is obvious. These features are present, in a modified form, in the 6-inch mount.

Because of the increasingly automatic nature of the new guns, interference eliminators have been provided to prevent adjacent mounts from "locking horns" while under individual control and following different targets.

Of the 6-inch it may be said they are the first rapid-fire AA mounts of such large calibers. Rate of fire has exceeded original design specifications by about two-to-one.

Both the 6- and 8-inch mounts have automatic fuse-setting while the projectile is in the slide, guaranteeing a uniform, minimum dead time for fuses. They may be set a spit second before shells are rammed into the breech.

TREND TOWARD HEAVIER SHIPS

The *Worcesters* and the *Des Moines,* as indicated, illustrate well the tendency to build bigger and heavier ships within each type. The constant demand for greater firepower, greater range, greater speed in each type is the cause of this phenomenon. It was exaggerated as a result of the treaties of the '20s, which imposed tonnage limits. When the treaties were finally abrogated, the immediate increase in size of naval units was startling.

Some examples, all displacements standard, are:

USS Arkansas (BB33), commissioned 1912, 26,100 tons; *USS Kentucky* (BB66), building, 45,000 tons. *USS Ranger* (CV4), commissioned 1934, 14,500; *USS Midway* (CVB41), commissioned 1945, 45,000 tons (*Lexington* and *Saratoga,* older than *Ranger,* omitted as not having been built from the keels up as carriers). *USS Salt Lake City* (CA25), commissioned 1929, first of the treaty cruisers, 9,100 tons; *USS Des Moines* (CA134), building 17,000 tons. *USS Omaha* (CL4), commissioned 1923, 7,050 tons; *USS Worcester* (CL144), building, 14,700 tons.

An interesting corollary of this search for more characteristics per hull, and consequently for ever bigger, ever better warships, is the development of new types as old types get too big for their jobs. As DDs increased in size from the 920-ton *Allens* to the 2,400-ton *Gearings* (the smallest and largest types which saw Second World War service), something was needed to fill a gap. Big destroyers, almost small cruisers, took a long time to build, cost large sums of money and required large numbers of trained personnel. The DE was born, lighter, cheaper, quicker to build, and actually better suited for many types of convoy work than the new destroyers. In like manner, the CVE was more or less a result of the tremendous growth of the CV, and the CLAAs of the late war were cut in under the CL program to do jobs too big for DDs but too small for the expensive CL.

Aside from the *Worcesters* and the *Des Moines,* ships building now, the most of which will be ready for the Fleet within the near future, and a few of which were recently completed, represent "end of the program" construction—the last war types, some of them slightly modified.

Incidentally, the Navy found it advisable to complete some (but not all) of the wartime building programs, because the earlier ships of the same types were hard-used in the war. Many of the first *Essexes* and *Clevelands,* for example, though not old in years, are old in service. Three or four years of war service seems about equivalent to 12-15 years of normal service. Maintenance and operating costs of the older wartime ships are consequently higher than those of the "end of the program" ships.

CARRIERS

Among the carriers are *USS Oriskany* (CV34) and *Valley Forge* (CV45), last of the *Essexes* building; *USS Saipan* and *USS Wright,* CVLs 48 and 49, two ships of a new class displacing 14,500 tons against the 11,000 tons of the previous *Independence* class (the *Saipans* are on a modified *Baltimore* hull, *Independences* are on *Cleveland* hulls), and *USS Coral Sea* (CVB43), end of the supercarrier program. The CVE program ended with completion of the last of the *Commencement Bay* class carriers *Rabaul, Palau* and *Tinian,* numbers 121-123.

The *Commencement Bays,* a new design based on the earlier four-ship *Sangamon,* or tanker-type, class, were the most successful CVE type and, in fact, the only CVEs which are in truth "warships." The *Commencement Bays* were designed as CVEs from the beginning, whereas all other CVEs were basically merchant designs. The improved design is particularly apparent in the vastly improved compartmentation of the *Commencement Bay* class. The Navy favored the *Commencement Bays* in selecting the CVEs it would retain on active service in the post-war years. Most of the other CVE classes were assigned to the Inactive Fleets, scrapped or sold as hulls.

A few cruisers complete the list of major warships building. *USS Toledo* (CA133) represents the end of the *Baltimore* program; *USS Albany* and *Rochester,* CAs 123 and 124, the last of three single-stack *Baltimores, USS Manchester* (CL83) will conclude the *Cleveland* program; *USS Fargo* and *Huntington,* CLs 106 and 107, two single-stack *Clevelands,* have joined the fleet.

GUIDED MISSILES

"The United States, racing to maintain its naval supremacy, is already building the world's first atomic-age capital ships armed with main batteries of robot rockets instead of guns."

This statement of the Associated Press sums up the story of the *Kentucky* and the *Hawaii.* Both hulls, *Kentucky* 70 per cent complete at Norfolk Naval Shipyard and *Hawaii* 85 per cent complete at New York Shipbuilding Corp., Camden, N. J., have been delayed pending major design changes which will equip them to launch guided missiles.

Obviously, the revolution is at hand. Admiral Cochrane stated when the *Kentucky-Hawaii* announcement was made: "The Navy's experiments with guided missiles have always contemplated eventual shipboard installation, although design studies were handicapped until the Navy had made more progress in the development of guided missiles. The design studies now being made for the *Kentucky* and *Hawaii,* together with the development of missiles guided by carrier-based aircraft, will lead to a revolution in the striking power of naval warships."

The Associated Press commented further: "It was patent, however, that the announcement marked the end of an era—the age of the rifled gun in the main batteries of American naval ships."

That age had seen naval architecture advanced from the steam frigate during the last half of the 19th century to mammoth 45,000-ton *Iowas* of the Second World War, the greatest engines of destruction afloat. Even the *Iowas* would not have been the zenith of the rifled gun era, had the United States gone ahead with its wartime plans and built the five ships of the *Montana* class ordered in 1940 but canceled in 1943. Monsters of 58,000 tons these were to be, mounting main batteries of 12 16-inch 50-caliber guns, three in each of four turrets; 903 feet in overall length with beams of 120 feet. These behemoths were to be named *Montana, Ohio, Maine, New Hampshire* and *Louisiana,* BBs 67-71, but, they were canceled, and perhaps it was well they were. Because the developments of this fantastic age have brought a weapon of even greater potential power than the battering, crushing 16-inch shell with its mere 20-odd mile range. The soaring rocket of who-knows-what maximum range has burned a blazing trail across the naval horizon.

Still in the top secret drawer are particulars on the *Kentucky* and the *Hawaii,* if indeed they have been decided. Vast problems must be met and overcome in adapting the huge vessels as rocket platforms, and providing the fire control systems necessary to launch missiles which may have undreamed-of ranges.

Discussing the experiments on the *Kentucky* and the *Hawaii,* Vice Admiral Forrest P. Sherman, USN, DCNO (Operations), commented that, if the designs work out, the

Navy may convert the earlier battle cruisers, *USS Guam* and *Alaska,* to guided missiles warcraft.

ATOMIC POWER FOR WARSHIPS

The age of the atom will have other effects on the surface Navy, chief among which may be the development of atomic power plants. Admiral Cochrane, in this connection, has predicted that the Navy will be successful in developing atomic-powered warships. The Admiral declared that atomic power for warships is a practical possibility, and that the Office of Naval Research is working on the theory considerations. The Navy, in conjunction with the Army's Manhattan District, is studying a solution of the engineering problems involved.

Admiral Cochrane's prediction is backed up by a statement of Dr. W. A. Higinbotham, chairman of the Federation of American Scientists, that, in two years, atomic fuels may be producing electric power at Oak Ridge, Tenn., and in five years atomic power may be propelling ships.

From that point on, any smart guess is apt to be a good one. It is obvious, for instance, that great changes may occur in space-weight factors aboard ship when the scientists have harnessed the atom for main propulsion machinery. Machinery and fuel account for 25-30 per cent of the space-weight in a modern BB, but these changes would not come all at once, nor would they all result in a saving of weight by any means. Some space-weight probably will have to be used to protect the crew from radioactivity. In the early stages of atomic propulsion development, it seems likely that a conventional heat transfer system will be used—boilers, turbines, etc., to convert atomic heat into shaft revolutions. "Direct drive" atomic power (jet-propelled battleship?) may be a much later development, but might easily save considerable weight on propulsion machinery.

It is a question whether such a saving in weight would reverse the trend towards bigger ships. More likely CNO, BuAer, BuOrd and BuShips would seize upon the weight advantage to pack more fighting characteristics into the hull. Perhaps more guns, more planes, more personnel anti-atomic armor—and, the naval architect is about back where he started.

These are, of course, matters of speculation and of present concern to ship designers, and they probably are far afield of the immediate interest Navy men have always held for the ship at hand. About the only conclusion that can be drawn, inherent in the preceding paragraphs, is that whether one is talking of the age of the Dahlgren gun or the age of the guided missile, the same determining factors keep cropping up in naval architecture; the balance between range and speed and firepower and armor, which naval architects always must consider as they seek the perfect warship.

WATERWAYS AND HARBORS

By Raymond A. Wheeler

Lieutenant General, U. S. A.; Chief of Engineers, War Department

RIVER AND HARBOR IMPROVEMENTS

Federal improvement and maintenance of rivers and harbors and other waterway channels of the United States and its territories and island possessions have been prosecuted for some 120 years under the direction of the Secretary of War and supervision of the Chief of Engineers, U. S. Army, in accordance with the authorizations of Congress.

During the first part of the fiscal year ended June 30, 1946, the river and harbor program continued in conformity with the national policy limiting wartime construction to conserve manpower, equipment, and materials. With the cessation of hostilities, however, work was commenced on a number of projects which had been deferred during the war. Improvement operations were carried out on 32 regular river and harbor projects of which one, Morro Bay, California, was completed. Maintenance operations were performed on 224 projects including the numerous coastal and inland harbors, connecting channels on the Great Lakes, and the extensive Intracoastal Waterway and Mississippi River network, together with the operation and care of the canalized Ohio River system, Illinois Waterway, and upper Mississippi River. The Federal expenditures for new work and maintenance operations on navigation projects and allied operations during the fiscal year ended June 30, 1946, were $79,542,449.85.

The principal items of new work performed during the fiscal year 1946, other than on canals and inland waterways, included enlargement of channel facilities of New York and New Jersey channels in Arthur Kill and from the vicinity of Bayside-Gedney Channel to Perth Amboy to provide for the larger tankers; and completion of dredging and rock removal in the main channel in Newark Bay from Kill Van Kull to about 1,200 feet south of the Central Railroad of New Jersey Bridge including the cut-offs at the entrance.

The improvement of Port Aransas-Corpus Christi Waterway was continued by dredging the Corpus Christi turning basin, Industrial Canal and Avery Point turning basin, and dredging was in progress at the end of the year in the channel leading to Corpus Christi turning basin.

Dredging of a seaplane base in San Diego Harbor to the extent desired by the Navy Department and of a settling basin at the mouth of the Los Angeles River diversion channel at Los Angeles and Long Beach harbors, California, was completed. At Morro Bay, California, the extension to the Morro Rock Breakwater was completed and dredging was performed in the main channel and the channel into the lower bay.

At Fort Peck Dam, Montana, on the Missouri River, alterations to the penstock, installation of a wyebranch structure and shaft No. 1 transition section, and installation of 15,000-kilowatt generating unit were continued in addition to other miscellaneous features. Operation of the previously installed 35,000-kilowatt generating unit was continued during the major portion of the year, the total power production being 102,506,000 kilowatt-hours. The reservoir was also operated in conjunction with maintenance dredging to maintain a channel suitable for navigation on the lower reach of the Missouri River. At the Bonneville Dam, Oregon and Washington, one spare 60,000-KVA transformer was installed and other equipment procured; ten power generation units were operated, producing 3,039,841,000 kilowatt-hours during the calendar year 1945.

In addition to the new work mentioned, maintenance operations were performed at important river and harbor and other waterway projects previously completed along the Atlantic, Gulf, and Pacific coasts, in the interior, and on the Great Lakes.

INTRACOASTAL WATERWAYS

The Atlantic and the Gulf Intracoastal Waterways provide a protected channel for barge and other light-draft navigation following coastal sounds, bays, rivers, and artificial channels. This canal system, extending for more than 2,300 miles along the Atlantic and Gulf coasts, affords a channel 12 feet or more in depth throughout the Atlantic coast section from Trenton, N. J., to Jacksonville, Fla., and in the Gulf coast section from Carrabelle, Fla., to Corpus Christi, Tex. During the past year new work dredging was performed in the Gulf Intracoastal Waterway in Texas between Corpus Christi Bay and North Bird Island and between Port Isabel and Three Islands.

The Cape Cod Canal, Massachusetts, extending from the head of Buzzards Bay to Cape Cod Bay, and the Chesapeake and Delaware Canal between the Delaware River and Chesapeake Bay, are sea level waterways, affording a protected and shorter route for coastwise ocean-going vessel traffic, and were maintained and operated as required.

INLAND WATERWAYS

The principal inland navigable waterways of the United States include the Mississippi River system, Illinois Waterway, New York State Barge Canal system, San Joaquin-Sacramento River system in California and Columbia River system in the northwest. The Mississippi River Waterway system embraces the river proper, the Red, Arkansas, Missouri, Illinois, Ohio, Tennessee, Monongahela, Allegheny, and Kanawha rivers and other streams. The Mississippi River has a channel for ocean-going vessels to Baton Rouge, La., and thence a channel for modern barge navigation to Minneapolis, Minn., and in its principal tributaries. The Illinois River and Waterway to Lake Michigan has a barge channel which connects the Great Lakes with the Mississippi River system. The Mississippi River Waterway system, together with the Intracoastal system which it connects at Plaquemine and New Orleans, La., brings barge navigation within reach of important industrial and farming centers.

The San Joaquin-Sacramento River system, with an outlet to the sea through San Francisco Bay, has a deep-draft channel to Stockton, Calif., on the San Joaquin River, and a moderate-draft channel to Sacramento, on the Sacramento River. The Columbia River affords a channel for ocean shipping to Portland, Ore., and Vancouver, Wash., and depths suitable for commercial vessel traffic to the head of the pool formed by the Bonneville Dam, and thence depths for barge navigation upstream to and including the Snake River.

These systems of inland waterways were maintained and operated during the past fiscal year to provide for water-borne commerce and other traffic. The principal items of new work performed during the fiscal year included open-river regulating works on the Mississippi River between the Ohio and Missouri rivers consisting of 33 dikes and three revetments which were completed, and six dikes which were under construction at the end of the fiscal year. On the Missouri River between Sioux City, Ia., and the mouth, 14 dikes and 31 revetments were completed, and 12,900 linear feet of pile dikes and 13,157 linear feet of revetment were strengthened or replaced; in addition, eight dikes and 23 revetments were under construction at the end of the fiscal year.

GREAT LAKES

The Great Lakes—Superior, Michigan, Huron, Erie and Ontario—have natural deep water except in the connecting channels which have been artificially deepened where necessary to accommodate deep-draft vessels. They have an outlet to the Atlantic Ocean *via* the St. Lawrence River and the Oswego and Erie branches of the New York State Barge Canal system and the Hudson River.

During the fiscal year ended June 30, 1946, a 1,200-foot extension to the Southwest Pier in St. Marys River, Michigan, was completed except for paving behind the concrete cap; also the reconstruction of Brady Pier and construction of a mooring basin and boathouse were practically completed.

RIVER AND HARBOR AUTHORIZATIONS

The River and Harbor Act, approved July 24, 1946, Public Law 525, 79th Congress, and the Act approved Nov. 7, 1945, Public Law 213, 79th Congress, authorized 62 new river and harbor projects or modifications of existing projects having an estimated total cost of about $525,000,000. These projects include the improvement of Portland harbor, Maine; Fall River harbor, Massachusetts; New Haven harbor and Bridgeport harbor, Connecticut; Schuylkill River, Pennsylvania; Savannah harbor, Georgia; and Hollywood harbor, Florida. A waterway connecting the Tombigbee and Tennessee rivers, Alabama and Tennessee; improvement of Lake Charles deep-water channel, Louisiana; and the Overton-Red River waterway from the Mississippi River to Shreveport, La.; and the Arkansas River and tributaries in the interest of navigation, flood control, and power development, were also authorized. Other projects include the Sabine-Neches waterway, Texas; Cumberland River and tributaries, Kentucky, and Tennessee; Great Lakes connecting channels, Michigan; and Two Harbors, Minnesota. For the West Coast, Congress authorized the improvement of San Diego River and Mission Bay and the construction of the Sacramento deep-water channel, California; Coos Bay, Oregon; and the Columbia River between Vancouver, Wash., and The Dalles, Oregon.

WATER-BORNE COMMERCE

The total net water-borne commerce of the United States, eliminating all known duplications of traffic, aggregated 618,906,000 short tons in the calendar year 1945. A total of 123,901,790 short tons was carried on the Mississippi River and its tributaries, and 112,982,630 short tons were moved through the St. Marys Falls Canal connecting Lake Superior and Lake Huron.

NET TOTAL INLAND WATERWAY COMMERCE

Year	Short Tons
1930	226,760,000
1931	179,735,000
1932	151,276,000
1933	182,965,000
1934	194,786,000
1935	225,918,000
1936	276,264,000
1937	313,287,000
1938	277,755,000
1939	329,400,000
1940	366,800,000
1941	427,223,000
1942	423,336,000
1943	389,722,000
1944	402,731,000
1945	394,204,000

TOTAL TONNAGE HANDLED AT PRINCIPAL PORTS

(Calendar Year 1945)

New York, N. Y.	103,962,023
Duluth-Superior, Minn. and Wis.	65,410,743
Philadelphia, Pa.	37,264,157
Toledo, Ohio	30,568,366
San Francisco Bay Area, Calif.	26,116,245
New Orleans, La.	25,204,532
Houston, Tex.	23,869,878
Los Angeles, Calif.	23,857,279
Baltimore, Md.	23,183,721
Buffalo, N. Y. (including canal traffic)	23,127,699
Chicago, Ill.	20,261,199
Agate Bay, Minn.	19,739,021
Cleveland, Ohio	18,656,853
Detroit, Mich.	16,037,985
Norfolk, Va.	14,447,348
Conneaut, Ohio	14,088,972
Beaumont, Tex.	13,604,977
Sandusky, Ohio	13,557,288
Ashtabula, Ohio	13,405,731
Indiana Harbor, Ind.	13,059,050
Boston, Mass.	12,850,522
Port Arthur, Tex.	12,292,646

FOREIGN AND DOMESTIC COMMERCE OF PORTS

(Calendar Year 1945)

Grand Division	Foreign		Domestic	Grand Total
	Imports	Exports		
Atlantic Coast	36,443,662	42,940,048	207,766,161	287,149,871
Gulf Coast	5,505,471	24,757,025	105,328,740	135,591,236
Pacific Coast	2,576,691	32,636,035	88,497,010	123,709,736
Great Lakes	6,510,853	20,724,336	329,837,100	357,072,289
Grand Total:				
Unadjusted	51,036,677	121,057,444	731,429,011	903,523,132
Adjusted[1]	51,036,677	121,057,444	433,499,383	605,593,504

[1] All known duplications eliminated.

WATERWAYS AND HARBORS

INLAND WATERWAY COMMERCE

(Calendar Year 1945)

	Short Tons
Atlantic Coast Rivers:	
Hudson River (except lower section)	5,746,608
Delaware River above Philadelphia	4,261,109
Chesapeake Bay tributaries:	
Potomac River below Washington	1,936,041
James River, Virginia	1,468,599
St. Johns River (Jacksonville to Lake Harney)	208,093
All others, Atlantic Coast	9,178,087
Gulf Coast Rivers:	
Mobile River tributaries	2,381,968
Black Warrior, Warrior, and Tombigbee Rivers	1,492,496
Southern Louisiana waterways (except Mississippi River)	5,060,035
All others, Gulf Coast	2,307,691
Pacific Coast Rivers:	
San Joaquin River, Calif.	1,220,413
Sacramento River, Calif.	956,489
Columbia River System:	
Columbia and Lower Willamette Rivers below Vancouver, Washington and Portland, Oregon	16,634,559
Other sections of Columbia River	2,017,231
Willamette River above Portland, Ore. and Yamhill River	2,876,665
Other Columbia River tributaries	1,624,176
All others, Pacific Coast	4,826,463
Mississippi River System:	
Mississippi River, Minneapolis, Minn. to the Passes	43,968,841
Ohio River	33,867,919
Monongahela River	26,555,502
Allegheny River	2,415,603
Kanawha River	4,499,191
Cumberland River	813,833
Tennessee River	2,163,404
All others, Mississippi River System	9,617,497
Other Rivers (Not tributary to Atlantic, Gulf, and Pacific Coasts):	
Fox River, Wisconsin	275,500
All others	37,141
Federal Canals and Connecting Channels:	
Atlantic Coast:	
Cape Cod Canal	14,683,878
Inland Waterway from Delaware River to Chesapeake Bay	3,689,984
Waterway from Norfolk, Va.:	
To Sounds of North Carolina	82,189
To Beaufort Inlet, N. C.	350,004
Waterway between Beaufort, S. C. and St. Johns River	1,497,368
Gulf Coast:	
Intracoastal Waterway, Apalachee Bay, Fla. to Mexican border	23,044,602
Sabine-Neches Waterway, Texas	26,318,285
Channel from Arkansas Pass to Corpus Christi, Tex.	13,074,220
Pacific Coast:	
Lake Washington Ship Canal, Washington	2,182,991
Great Lakes:	
Keweenaw Waterway (Through Traffic)	356,622
St. Marys Falls (Soo) Canal	112,982,630
Sturgeon Bay and Lake Michigan Ship Canal (Through Traffic)	496,120
Detroit River (Partial)	16,532,853
All others, of record	24,588,480
Total Federal Canals and Connecting Channels	239,880,226
State and Private Canals:	
New York State Barge Canal System	2,968,682
Florida State Canals	430
Navigation Canal, Inner Harbor, La.	1,429,839
All other State and Private Canals	246,633
Total, State and Private Canals	4,645,584
Gross total, all Rivers, Canals and Connecting Channels	432,936,964
Net total, all Rivers, Canals and Connecting Channels (Corrected for duplications because of commerce moving over two or more waterways)	394,203,902

MISSISSIPPI RIVER SYSTEM

Works for the improvement of the channel of the Mississippi River proper were continued during the fiscal year ended June 30, 1946 at various places below Cairo, Ill., and the levees built for flood control from Rock Island, Ill., to near Head of Passes, La., now extend from 484 miles above to 966 miles below Cairo at the confluence of the Mississippi and Ohio rivers. Below Cairo revetment was in place over 135 miles of river bank, and 30 miles of permeable dikes are in place for bank stabilization and channel regulation. The 2,500-mile levee system was substantially completed and now contains nearly 1,200,000,000 cubic yards of earth. The Bonnet Carre spillway structure and the New Madrid floodway have been completed and are ready for operation when required. The flood control dam on the St. Francis River, and two of the four planned in the Yazoo River Basin have been completed and are in operation.

In the 655-mile reach of the Mississippi River above Alton, Ill., to Minneapolis, Minn., a system of low-head dams with locks provide a 9-foot channel depth for modern barge navigation. Below Alton the channel is maintained by open river works. The Ohio River and certain of its improved tributaries are also canalized to provide a 9-foot channel for commercial navigation serving this highly industrialized region. The system of six locks and dams on the Ouachita and Black rivers provides depths of 6½ feet at low water from the Red River to Camden, Ark., a distance of 351 miles. The Red River proper and the Arkansas River have been improved for light-draft navigation throughout a total length of more than 1,000 miles.

NATIONAL FLOOD CONTROL

Exclusive of the large projects previously authorized for the alluvial valley of the Mississippi River and the Sacramento River, in California, construction on the Federal program for general flood control was begun in 1937 after the first funds for that purpose were appropriated by Congress. By the end of June, 1946, 50 reservoirs and 135 local protection projects were in operation throughout the United States. In addition to previous authorizations, Congress in the Flood Control Act, approved July 24, 1946, authorized expenditures by the War Department amounting to $772,000,000 for approximately 123 additional flood control and multiple-purpose projects. With the passage of the 1946 Flood Control Act, Congress approved authorizations totaling $2,452,400,000 for the construction of about 770 reservoirs and local protection projects. In the period from 1937 through July 30, 1946, funds totaling $835,421,900 were appropriated for Flood Control General purposes of which $769,472,000 was for the construction and detailed planning of projects and the remaining $65,949,900 was for maintenance of completed projects, surveys, and miscellaneous items.

The authorized projects collectively constitute a comprehensive coordinated plan for the development of the river basins of the nation to provide economical flood protection and allied benefits for centers of industry and population, millions of acres of rich, agricultural land, and vital lines of communication. In addition to their use for flood control, many of the reservoirs provide favorable possibilities for the development of hydroelectric power, stream flow regulation, water conservation, recreation, and other water uses.

A number of projects were completed during the year, including the Indian Rock Dam in Pennsylvania and local protection works at East Peoria, Ill., Sauvie Island, Oregon, and in the Skamokawa Creek area, Washington.

RESUMPTION OF FLOOD CONTROL DEFERRED PROJECTS

Subsequent to the cessation of hostilities in the Pacific, Congress appropriated $84,659,000 in the First Deficiency Act for fiscal year 1946, and $138,901,000 in the War Department Civil Appropriation Act for fiscal year 1947, for continuing work on flood control projects deferred during the war emergency and for the initiation of new, urgently needed projects.

During the year, work was resumed on the flood protection projects in river basins throughout the nation which had been stopped during the war in order to conserve equipment, materials, and manpower. These projects include the Lisle and Elmira, New York, local protection projects in the headwaters of the Susquehanna River; the Plymouth, Wilkes-Barre, Williamsport, and York, Pennsylvania local protection works along the middle and lower Susquehanna River; the Wallace Lake Dam and Reservoir in the Red River Basin, Louisiana; the John Martin Dam and Reservoir, Colorado, the Blue Mountain Dam and Reservoir, Arkansas, and the Canton Dam and Reservoir. Oklahoma, all in the Arkansas River Basin; Clearwater Dam and Reservoir, Missouri in the White River Basin; local protection at the Kansas City and the Kanopolis Dam and Reservoir on the Smoky Hill River in Kansas, both in the Missouri River Basin; local protection works at Cincinnati and Massillon, O., the Cache River Diversion unit at Mounds and Mound City, Ill., and the Dale Hollow and Center Hill Dam and Reservoir projects on tributaries of the Cumberland River, all in the Ohio River Basin; Los Angeles River channel improvement and the Santa Fe Dam, both in Los Angeles County drainage area, California.

Projects previously authorized and for which plans and specifications were prepared during the war were initiated at the following localities: local protection at Nashua, N. H. in the Merrimack River Basin; the Union Village Dam and Reservoir on the Ompompanoosuc River in Vermont; local protection works at Whitney Point, New York and the Almond Dam and Reservoir, both units of the project for the headwaters of the Susquehanna River; Sunbury, Penn. in the Susquehanna River watershed; the Clark-Hill Dam and Reservoir project in the Savannah River Basin and the Allatoona Dam and Reservoir in the Coosa River Basin, Georgia; the Narrows Dam and Reservoir on the Little Missouri River, Arkansas; local protection for Shreveport, La. in the Red River Basin; Hulah Dam and Reservoir and Fort Gibson Dam and Reservoir, Oklahoma; Fall River Dam and Reservoir, Kansas; Wister Dam and Reservoir, Oklahoma, all in the Arkansas River Basin; the Bull Shoals Dam and Reservoir, Arkansas, in the White River Basin; Harlan County Dam and Reservoir on the Republican River, Nebraska; Cherry Creek Dam and Reservoir for the protection of Denver, Col., local protection works at Kensler's Bend, Schuyler and Omaha, Nebraska, and Council Bluffs, Ia. and the main Missouri River dams at the Fort Randall and Garrison sites, all in the Missouri River Basin; Delaware Dam and Reservoir, Ohio; Dewey Dam and Reservoir, Kentucky; and the Conemaugh Dam and Reservoir project, Pennsylvania, local protection works at Newport, Ky., Punxsutawney, Penn., Parkersburg and Elkins, W. Va., all in the Ohio River Basin; and the Dorena Dam and Reservoir in the Willamette River Basin, Oregon.

The separately authorized project for the Sacramento River and its tributaries in California, will provide flood protection for cities and towns, fertile agricultural lands, and railway and highway facilities of great importance to the economy of the western United States. Work was continued on this project throughout the year, including levee construction along the Sacramento, American, and Feather rivers, and the clearing of obstructions in Butte Slough and the Sutter by-passes.

FLOOD DAMAGE

Although the year 1946 was not a serious flood year from the national viewpoint, there were many flash floods which caused very serious damage to relatively small areas. The more important floods during the year include a very serious flood which struck the Willamette River Basin in late December 1945 and early January, 1946, and caused damages estimated at $6,000,000. The reduction in damages credited to the operation of the completed Cottage Grove and Fern Ridge Reservoirs is estimated at $1,200,000. The Yazoo River had two floods in the spring of

1946 which closely approached the all-time record for that stream. The end of May saw the North and West branches of the Susquehanna River at near record flood stage. The October flood of the North Canadian River in Oklahoma inundated portions of Oklahoma City as well as other urban and agricultural land along that stream and its tributaries.

PERIODICAL PUBLICATIONS

Army and Navy Journal
1701 Connecticut Ave. N.W., Washington, D. C.
Army and Navy Register
511 Eleventh Street N.W., Washington, D. C.
Army Ordnance
706 Mills Building, Washington, D. C.
Cavalry Journal
1719 K St., N.W., Washington, D. C.
Coast Artillery Journal
631 Pennsylvania Ave., N.W., Washington, D. C.
Field Artillery Journal
1218 Connecticut Ave., N.W., Washington, D. C.
Infantry Journal
1115 Seventeenth Street N.W., Washington, D. C.
Marine Corps Gazette
United States Marine Corps, Washington, D. C.
Military Engineer
808 Mills Building, Washington, D. C.
Quartermaster Review
1026 17th St. N.W., Washington, D. C.
U. S. Coast Guard Magazine
3 Church Circle, Annapolis, Md.
U. S. Navy Magazine
South and Hanover St., Pottstown, Pa.
Waterways Journal
1605 Chemical Building, St. Louis, Mo.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

SERVICE SOCIETIES

American Legion, The, National Headquarters, 777 N. Meridian St., Indianapolis, Ind.
American Remount Assn., Otis Bldg., Washington, D. C.
American Society of Naval Engineers, Navy Bldg., Constitution Ave., N.W., Washington, D. C.
Army Ordnance Assn., Mills Bldg., 17th St. and Pennsylvania Ave., Washington, D. C.
Association of Military Surgeons of the United States, Army Medical Museum, Washington, D. C.
Chemical Warfare Service, Edgewood Arsenal, Maryland.
Military Order of the Purple Heart, 607 N. Hayford Street, Lansing, Mich.
Navy League of the United States, Inc., Mills Bldg., Washington, D. C.
Quartermasters' Assn. of the United States, 1026 17th St., N.W., Washington, D. C.
Reserve Officers' Assn. of the United States, 1726 Pennsylvania Ave., N.W., Washington, D. C.
Society of American Military Engineers, 808 Mills Bldg., Washington, D. C.
Society of Naval Architects & Marine Engineers, 29 W. 39th St., New York City.

United States Cavalry Assn., 1719 K St., N.W., Washington, D. C.

United States Field Artillery Assn., 1218 Connecticut Ave., N.W., Washington, D. C.

United States Infantry Assn., 1115 17th St., N.W., Washington, D. C.

United States Naval Institute, Annapolis, Md.

PATRIOTIC AND HEREDITARY

Colonial Dames of America, 421 E. 61st St., New York City.

Daughters of 1812, National Society, U. S., 1461 Rhode Island Ave., N.W., Washington, D. C.

General Society of Colonial Wars, P. O. Box 396, Rosemont, Pa.

General Society of Mayflower Descendants, 916 Madison Ave., Plainfield, N. J.

Military Order of Foreign Wars of the U. S., Sub-treasury Building, New York City.

Military Order of the Loyal Legion of the U. S., 1805 Pine Street, Philadelphia, Pa.

Military Order of the World War, 1700 Eye St., N.W., Washington, D. C.

National Security League, 45 W. 45th St., New York City.

National Society of Colonial Dames of America, 2715 Q St., N.W., Washington, D. C.

National Society of the Daughters of the American Revolution, 1720 D St., N.W., Washington, D. C.

National Society of Professional Engineers, National Press Building, Washington, D. C.

National Society of the Sons of the American Revolution, 1227 16th St., N.W., Washington, D. C.

Naval and Military Order, Spanish-American War Veterans, 184 State House, Boston, Mass.

Pilgrim Society, Pilgrim Hall, Court St., Plymouth, Mass.

Society of the Cincinnati, Inc., 2118 Mass. Ave., N.W., Washington, D. C.

Sons of Confederate Veterans, 609 Law Bldg., Richmond, Va.

Sons of Union Veterans of the Civil War, Colonial Trust Bldg., Reading, Pa.

United Confederate Veterans, 1528 Lowerline St., New Orleans, La.

United Spanish War Veterans, Inc., 40 G St., N.E., Washington, D. C.

Veterans of Foreign Wars of the U. S., Broadway at 34th St., Kansas City, Mo.

PART FOUR

ECONOMICS AND BUSINESS

DIVISION X

BUSINESS AND FINANCE

ECONOMIC AND BUSINESS CONDITIONS

By S. S. Huebner
Professor, University of Pennsylvania

BUSINESS GOOD DESPITE RECONVERSION HANDICAPS

Serious labor disturbances, as well as confusing governmental price and priority regulations, prevailed during nearly all of 1946, and tended to retard the reconversion procedure of business from a war to a peacetime economy. Despite the handicaps and confusion, however, the year 1946 presents a remarkable record of business in both commodity volume and dollar value. Nearly all of the leading business barometers show a gain over 1945, but where that gain happens to be expressed in dollars, it must be interpreted in the light of the strong inflationary tendency of the year and the marked corresponding depreciation in the dollar.

Viewing economic barometers as a whole, substantial increases occurred along nearly all important lines of business activity. Total crop production for the year exceeded by 2.5 per cent the previous peak year of 1942 and, with the exception of cotton, all leading crops showed up most favorably as regards both volume and quality. Moreover, the agricultural group, and the same may also be said for the manufacturing and mining groups, enjoyed a substantial rise in price for nearly all of the basic commodities. New capital flotations for the year were more than twice those of 1945. The steel industry operated during the current year on an annual basis of 63,000,000 tons of steel. With the exception of 1929 when 63,205,000 tons were produced, the 1946 production exceeded that of any other year in the industry's history prior to the war. New construction showed a decided improvement, the dollar value being more than twice that of 1945, and larger than for any previous year except the peak war production program year of 1942.

Electric output for the year exceeded that of 1945 by about 14 per cent. Exports and imports, when combined, remained about the same as the 1945 total. Automotive output also grew to a monthly rate better than for the pre-war years of 1938 or 1939. For the first nine months, corporate dividends on common stock issues listed on the New York Stock Exchange exceeded those for the corresponding period of 1945 by nearly 13 per cent. Using the figures of the Federal Reserve Board, industrial production figures, as explained later in this account, showed very substantial increases, compared with the previous year, in nearly all of the important lines of business activity.

Similarly the Federal Reserve figures show substantial increases in employment in nearly all leading business pursuits and an extraordinary increase in wages.

SOME BAROMETRIC EXCEPTIONS

The only noteworthy barometric exceptions, showing decreases for 1946 when compared with 1945, were bank clearings, railroad freight loadings, bituminous coal production, commercial failures, and stock market price movements. Bank clearings at the end of the current year were down by about 16 per cent as compared with 1945. Railroad freight car loadings for the first 11 months were down by about 2.2 per cent, while for the same period bituminous coal production decreased by 8.7 per cent. Commercial failures, with respect to both number and amount of liabilities, were somewhat higher than the excellent showing of 1945, but still very good when compared with the previous decade.

Of all leading economic barometers, the 1946 stock market presents the darkest picture. During the first half of the year, the average stock price level showed a slight appreciation over the closing level of 1945, but following June a bear market began to run its course and continued until the close of October with increasing violence. Comparing the October average with the January average of 1946, railroad stocks declined by 32.4 per cent, industrial stocks by 17.3 per cent, public utilities by 16 per cent, and coppers by 17 per cent. Combining the first three leading groups, the depreciation, as reported by the Standard and Poor's index, amounted to 18.1 per cent, as compared with an appreciation of 22.33 per cent for the corresponding period of 1945. The reversal in the stock market trend was so abrupt, in fact, as to bring about a public stressing of the likelihood of a business depression having been discounted by the stock market. Many factors contributed to bring about the speculative change from optimism to pessimism, but the principal reasons seemed to be the exceedingly large number of strikes throughout the nation, particularly in the major industries, the rapid increase in wages, the inability of many industries, owing to governmental restrictions, to obtain compensating price increases, and the fear engendered by the inflation spiral which seemed to engulf the nation's industrial activities. Although these factors continued their influence to the end of the year, the violent stock market reaction seemed to be halted, at least temporarily, by the November election with its landslide trend to the right.

AGRICULTURE

At the beginning of October, estimates of 1946 crop production by the Department of Agriculture placed the total at 2.5 per cent in excess of the previous peak of 1942 and 26.4 per cent above the 1923-32 average. Corn, as the outstanding crop, was expected to yield 3,374,000,000 bushels, compared with 3,018,000,000 in 1945 and a 1935-44 average of 2,608,000,000 bushels. Moreover, the quality of corn was exceptionally good, whereas the year before there was an unusually poor average quality. The feed grain crops of all kinds were expected to total 127,500,000 tons, or 4 per cent more than the 1942 peak. Moreover, as reported by the *Guaranty Survey* (Oct. 30): "Indicated production of food grain, a peak total of 37,400,000 tons, includes 1,169 million bushels of wheat—a winter crop of 879 million and a spring crop of 289 million bushels. The food-grain output apparently will be 19% larger than the quantity reported last year and 14% above average. Other major agricultural products promising record yields this year include potatoes, tobacco, peaches, pears, plums and truck crops."

The only very unfavorable crop was cotton, the estimated yield being only 8,724,000 bales as compared with 9,015,000 bales in 1945 and a 1935-44 average of 12,553,000 bales. The 1946 cotton crop was the smallest since 1921, and fell considerably short of indicated domestic and export demands.

Prices of leading farm products during 1946 showed very large increases along nearly all lines. Thus. using closing prices for agricultural commodities, quotations on Nov. 1. 1946 (*Guaranty Survey,* Nov. 27. 1946, and *Babson's Price Trends,* Nov. 25, 1946), compare as follows with prices on the corresponding date in 1945: wheat, No. 2 red, winter, Chicago, per bu., $2.17 as compared with $1.80; corn, No. 2 yellow, Chicago, $1.40 as compared with $1.18½; rye, No. 2, New York, per bu., $2.855 compared with $1.959; oats, No. 2 white, Chicago, per bu., $.92 compared with $.688; cotton, middling, spot, New Orleans, per lb., 29.55¢ as compared with 22.35¢. The following additional prices may be mentioned (*Babson's Price Trends,* Nov. 25, 1946) by way of comparison with the same date for 1945: beans, domestic pea, cwt., $15 as compared with $6.82; butter, creamery, ex. (92 score), lb., $.775 as compared with $.423; cheese, Fancy Flats, Held, New York State, lb., $.31 compared with $.31; eggs, mixed colors, standards, doz., $.38 compared with $.461; flour. Spring 80 per cent, Minn., cwt., $5.42 with $3.34; lard, choice Western, lb., $.40 compared with $.138; flaxseed, cash closing, Duluth, bu., $7.25 compared with $3.10; barley, Milwaukee. bu., $1.67 compared with $1.303; cattle, live, weekly aver., Chicago, cwt., $25 with $17.10; hogs, live, weekly aver., Chicago, cwt., $23.40 with $14.80; and sheep, live, weekly aver., Chicago, cwt., $7.25 with $5.10.

MANUFACTURING AND MINING INDUSTRIES

In these industries, price increases during 1946 as compared with 1945. were also very substantial. Comparing November, 1946, with the corresponding quotations for 1945, the following price comparisons may be selected from those listed in the *Guaranty Survey* (Nov. 27, 1946): coffee, 26.50¢ per lb. as compared with 13⅜¢; copper, 17.37½¢ per lb. as compared with 11.87½¢; hides, 32.00¢ per lb. as compared with 15½¢; pig iron, $28.00 per gross ton as compared with $25.25; steel billets, Pittsburgh, $39 per gross ton compared with $36.00; lead, 10.50¢ per lb. compared with 6.50¢; petroleum, Pennsylvania, $3.41 per bbl. compared with $3; rosin, $7.82 per 100 lbs. compared with $6.76; rubber, .22½¢ per lb. compared with .22½¢; sugar, 5.57½¢ per lb. compared with 3.75¢; tin, 70.00¢ per lb. compared with 52.00¢; wool, Ohio fine delaine, per lb., $1.14 compared with $1.21; and zinc, 10.50¢ per lb. as compared with 8.25¢.

NEW CAPITAL FLOTATION

As explained in last year's issue, new capital financing (as distinguished from refunding issues) approximately doubled during 1945 as compared with 1944, while 1944 also represented a doubling of the 1943 record. The total new capital financing for the first nine months of 1946 (latest available) aggregated $1,989,589,000, as compared with $927,461,000 for the corresponding period of 1945, and with $459,000,000, $200,000,000, and $614,000,000 for the corresponding months of 1944, 1943, and 1942. For the corresponding period of 1946, the showing of $1,990,000,000 also compares with $770,000,000 for 1941, $458,000,000 for 1940, $311,000,000 for 1939, $316,000,000 for 1938, and $1,154,000,000 for 1937. It should also be noted that a considerable monthly fluctuation in new capital flotations took place during 1946. Thus, for January, February, and September, the monthly totals reached only $131,000,000, $47,000,000, and $170,000,000, respectively, whereas for April, June, July, and August. the monthly totals reached $290,000,000, $307,000,000, $367,000,000, and $354,000,000, respectively.

The total of refunding issues for the first nine months of the year showed a considerable decrease, the total standing at $2,635,072,000 in contrast to the corresponding figure for the same period of 1945 of $3,508,771,000. The 1946 figure also compares, for the corresponding period, with $1,362,000,000 for 1944, $445,000,000 for 1943, and $296,000,000 for 1942. The 1946 figure may also be compared with the corresponding figures of $1,354,000,000 for 1941 and $1,252,000,000 for 1940. It should also be noted that the new capital totals for the first nine months of 1946, $1,990,000,000, greatly exceeds the total for all of 1945, namely, $1,255,000,000. By way of contrast, the refunding total for the first nine months of 1946, $2,635,000,000, is but slightly more than half of the 1945 yearly total of $4,911,000.000.

CORPORATE FINANCING

	1945		1946	
	Capital	Refunding	Capital	Refunding
January	$ 44,071,000	$278,900,000	$131,170,000	$112,954,000
February	28,925,000	137,182,000	47,089,000	264,262,000
March	68,072,000	295,766,000	127,315,000	284,215,000
April	100,923,000	555,122,000	289,600,000	362,663,000
May	158,460,000	367,036,000	191,930,000	663,502,000
June	1,352,000	79,085,000	307,350,000	366,065,000
July	211,614,000	749,921,000	366,543,000	345,174,000
August	107,244,000	338,268,000	354,302,000	92,057,000
September	104,820,000	705,441,000	170,290,000	144,180,000
October	209,087,000	988,931,000		
November	59,776,000	78,649,000		
December	161,061,000	337,010,000		

Source: *Survey of Current Business*, November, 1946.

YEARLY TOTALS

	Capital	Refunding
*1946	$1,989,589,000	*$2,635,072,000
1945	1,255,405,000	4,911,361,000
1944	631,522,000	2,422,620,000
1943	375,623,000	684,997,000
1942	637,899,000	419,866,000
1941	1,040,042,000	1,552,143,000
1940	736,382,782	2,026,195,056
1939	371,249,537	1,807,623,508
1938	871,998,950	1,267,245,739
1937	1,225,012,213	1,208,679,946
1936	1,214,950,299	3,416,995,382
1935	403,569,958	1,863,858,807
1934	178,257,949	312,836,500
1933	160,717,178	220,866,478
1932	325,361,625	318,533,720
1931	1,763,448,723	825,516,700
1930	4,944,403,166	528,875,877
1929	8,649,439,560	1,386,921,569
1928	6,079,602,416	1,738,274,615
1927	5,391,008.544	1,928,187,260
1926	4,357,002,750	942,550,970
1925	4,100,725,167	637,384,524
1924	3,322,295,764	516,275,300
1923	2,702,496,155	530,343,942

* Nine months.

Source: *Commercial and Financial Chronicle*. 1941–1946 figures from *Survey of Current Business*.

BANK CLEARINGS

Bank clearings for 1946, despite violent inflationary tendencies, fell considerably below those of 1945 and 1944. The grand total for the week ended Nov. 30 (*Commercial and Financial Chronicle*), for 111 cities, was $11,174,530,964, as compared with $13,393,754,063 for the corresponding week of 1945, a decrease of 16.6 per cent. For the corresponding week of 1944 and 1943, the totals were $13,619,784,416 and $9,856.279,499, respectively. Exclusive of New York City, the nation's Federal Reserve Districts show total bank clearings for the week ended Nov. 30 of $5,321,989,623, an increase of only 0.4 per cent as compared with the 1945 corresponding week's total of $5,303,029,445. The showing for 1946, exclusive of New York City, also compares with $5,712,823,131 and $4,689,381,123 for the corresponding week of 1944 and 1943, respectively. The respective gains and losses for each of the 12 Federal Reserve Districts, for the week ended Nov. 30, 1946, in comparison with 1945, are shown by the following table:

Federal Reserve District	1946 millions	1945 millions	Increase or Decrease %
First—Boston (12 cities)	434	512	−15.2
Second—New York (12 cities)	6,037	8,283	−27.1
Third—Philadelphia (10 cities)	723	749	− 3.4
Fourth—Cleveland (7 cities)	618	612	+ 1.1
Fifth—Richmond (6 cities)	314	343	− 8.4
Sixth—Atlanta (10 cities)	484	448	+ 7.9
Seventh—Chicago (17 cities)	762	741	+ 2.8
Eighth—St. Louis (4 cities)	366	350	+ 4.5
Ninth—Minneapolis (7 cities)	272	248	+ 9.8
Tenth—Kansas City (10 cities)	373	330	+13.1
Eleventh—Dallas (6 cities)	192	189	+ 1.7
Twelfth—San Francisco (10 cities)	599	589	+ 1.7
Grand Total (111 cities)	11,175	13,394	−16.6
Outside New York City	5,322	5,303	+ 0.4

SECURITY MARKETS

The 1946 security market seems to mark the end of the 1943-46 bull market, and furnishes a picture more dismal than any of the other leading economic barometers. Two main trends occurred during the year: (1) a slight appreciation, as compared with the close of 1945, in the price level during the first five or six months, and (2) a bear market of very sizable proportions following June and continuing with increased violence during July and October, inclusive. Despite the very high price level, gilt edge bonds continued to hold their 1945 level during the first nine months of the current year. In October, however, a decline occurred from a September high average of 119.1 to an October high average of 116.2, or 2.9 points.

Combining the three leading groups of stocks (Standard and Poor's Index)—railroads, industrials and public utilities—the October, 1946, average price of 117.2 when compared with the January average of 143.1 shows a depreciation for the first ten months of the year of 18.1 per cent. This compares with an appreciation of 22.33 per cent for the same period of 1945, and with 8.2 per cent for the same period of 1944. For the first ten months of 1946, the following price declines, comparing the October average with the January average, occurred in the four leading groups of stocks: railroad stocks from 66.7 to 45.1, or a decline of 32.4 per cent; industrial stocks from 172.8 to 142.9, a decline of 17.3 per cent; public utilities from 88.5 to 74.3, a decline of 16 per cent; and coppers from 132.2 to 109.7, a decline of 17 per cent. The annual volume of transactions on the New York Stock Exchange was slightly less than during 1945, namely, 363,709,312 shares, as compared with 377,564,000 for 1945. Million and million and a half share days were, as in 1945, the general rule. Transactions on the New York Curb Exchange were also about the same as in 1945.

The change during the current year from speculative optimism to pessimism was very marked. In fact, press accounts during recent months have stressed the likelihood of a business depression having been discounted by the stock market. (See summary under the section on "The Security and Money Markets.")

RAILROAD INDUSTRY

The year 1946 showed a somewhat smaller railroad traffic than prevailed during 1945 and the preceding four years, as described in previous issues of THE AMERICAN YEAR BOOK. According to the Association of American Railroads (announcement Dec. 5), revenue freight car loadings during the first 11 months of 1946 totaled 38,319,186, a decrease of about 2.2 per cent when compared with the 1945 total, for the same period, of 39,176,328. For the same period of 1944, the total stood at 40,517,049.

Earnings, however, have not been maintained as has the volume of traffic. According to the Association of American Railroads, Class I railroads of the United States, representing a total of 227,702 miles, had an estimated net income during the first ten months of 1946, after interest and rentals, of $155,000,000, compared with a net income of $473,196,000 for the corresponding period of 1945. Net railway operating income, before interest and rentals, totaled $450,730,000, compared with $830,561,000 in the same period of 1945. According to the same report, the rate of return on property investment for the 12 months ended Oct. 31, 1946, averaged 1.7 per cent, compared with a rate of return of 3.57 per cent for the 12 months ended Oct. 31, 1945.

COAL AND COKE PRODUCTION

Despite unusual labor troubles, production in this important industry showed only a comparatively small decline from the record production of the previous year. From Jan. 1 to Nov. 30, 1946 (latest available), the total output of bituminous coal and lignite amounted to 485,000,000 net tons compared with 531,000,000 tons produced during the corresponding period of 1945, a decrease of 8.7 per cent. Beehive coke production for the week ended Nov. 23, 1946, totaled 6,470,000 tons, compared with 10,340,000 tons for the corresponding week of 1945, a decline of 37.4 per cent.

EXPORTS AND IMPORTS

Exports of merchandise for the first nine months of 1946 (latest available) totaled $7,118,000,000, as compared with $7,975,000,000 in the corresponding 1945 period. The year's total compares with exports of merchandise for the first nine months of 1944 of $10,741,746,000, of $9,107,368,000 for the corresponding period of 1943, and with annual totals of $4,022,000,000 for 1940, $3,177,000,000 for 1939, $3,094,000,000 for 1938, $3,349,000,000 for 1937, and $5,241,000,000 for the record peace year of 1929.

Total imports during the first nine months of 1946 rose to $3,519,000,000 from $3,172,000,000 in the corresponding period of 1945. The 1946 total also compares with $2,923,000,000 for the corresponding period of 1944, with $2,449,000,000 for the same period of 1943, and with annual totals of $2,626,000,000 for 1940, $2,318,000,000 for 1939, $1,960,000,000 for 1938, $3,084,000,000 for 1937, and $4,399,000,000 for the record peace year of 1929.

The enormous difference between exports and imports during 1946 and 1945 still reflects abnormal war conditions. As explained in previous years, this business barometer became badly warped by war conditions, which will wear off only gradually. It should be noted, however, that a material decline in 1946 exports during September, $641,000,000 compared with $881,000,000 during August, the peak month for the year, is traceable mainly to the effects of the maritime strike, with a heavy decline in the exportation of finished manufactures. A substantial decline in September imports (11 per cent) when compared with August was owing to a falling off in receipts of raw materials and foodstuffs, principally furs, coffee, sugar, and silk.

AUTOMOTIVE INDUSTRY

Previous yearly accounts describe the almost complete operation of this industry in war production and the necessity, therefore, of an almost complete reconversion to peacetime production. Much reliance was placed upon a rapid reconversion, but unfortunately this important manufacturing industry remained disorganized during much of 1946 by strikes and materials' bottlenecks. In fact, most of the business was shut down for about three months by a general strike which affected all of the producers in this category, and subsequently strikes continued for months in many of the manufactories of automotive parts.

Despite the labor difficulties, however, the industry made considerable headway. On Nov. 18, the Civilian Production Administration announced that passenger automobile output for October reached a new post-war peak of 285,562 units, a gain of 46,152 over September, and a rate of production "better than the monthly rate for either 1938 or 1939 but slightly lower than the monthly rate for 1940 and 1941." Truck production for October also increased to a post-war monthly high of 109,953 units, a gain of nearly 18,000 over September.

The Civilian Production Administration estimated that the 1946 output would reach about 2,200,000 cars, compared with 1941 production of 3,755,309 units and 3,914,511 in 1937. Manufacturers' forecasts for the three months following October were reported as 271,315 units for November, 294,199 units for December, and 344,448 units for January.

IRON AND STEEL OPERATIONS

As was the case in 1945, this basic industry again suffered from two severe coal strikes during 1946. In addition, however, the year also witnessed an important strike within the industry itself, as well as numerous strikes in important steel-consuming industries such as the automotive and electrical industries. Had it not been for these numerous shutdowns the year's production would have been a record one. As explained by *The Iron Age* (Dec. 26): "Had it not been for the steel strike and the two coal strikes during the year, steel industry output could reasonably have been expected to reach 81,000,000 to 83,000,000 tons of ingots. Instead of this figure, estimated output for this year indicates a total steel ingot production of 65,900,000 tons. This experience indicated that because of strikes and the confusion in scheduling iron and steelmaking programs before and after such shutdowns resulted in a loss of more than 16,000,000 tons of steel ingots during this year."

According to the American Iron and Steel Institute, the last week's operations (ending Dec. 31) of the steel industry were scheduled at 87.7 per cent of rated capacity, equivalent to 1,545,600 tons. This rate compares with 60.2 per cent or 1,061,000 tons a month ago, and with 83.8 per cent. or 1,476,300 tons a year ago. It should also be noted that, since OPA price controls were removed on iron and steel scrap, the price of heavy melting steel has advanced about $12 a ton, although in some instances the net advance has been about $9.50 a ton.

ELECTRIC OUTPUT

According to the Edison Electric Institute, the production of electricity by the electric light and power industry of the United States totaled 4,672,712,000 kwh. for the week ended Dec. 7, 1946. This output compares with 4,096,954,000 kwh. for the corresponding week of 1945, thus showing an increase of 14.1 per cent. During the three months preceding Dec. 7, the weekly output for 1946 was consistently over that of 1945, the weekly increase ranging from a minimum of 10 per cent to a maximum of 24 per cent. The output of 4,672,000,000 kwh. for the week ended Dec. 7, 1946, also compares with 4,097,000,000 kwh. for the corresponding week of 1945. 4,538,000,000 for the corresponding week of 1944, 4,560,000,000 for the week of Dec. 1, 1943, 3,884,000,000 for the corresponding week of 1942, 3,976,000,000 for 1941, 2,755,000,000 for 1940, 1,415,000,000 for the depression year of 1932, and 1,637,000,000 for the prosperity year of 1929.

BUILDING CONSTRUCTION

Despite many difficulties, this important industry showed decided improvement over 1945. According to the F. W. Dodge Corporation Reports, the total volume of construction contracts awarded in 37 eastern states during the first ten months of 1946 amounted to $6,528,700,000. The indications, as reported, are that there will be a larger construction total for the entire year than for any previous year except 1942, which was the peak year of the war construction program. It is also reported that the

1946 dollar total will be equal to about 2¼ times that of 1945. Classified, the aforementioned ten months' contract total of $6,528,700,000 comprised the following: non-residential buildings, $2,407,400,000, or 37 per cent; residential buildings, $2,727,600,000, or 42 per cent; and heavy engineering construction, $1,393,700,000, or 21 per cent. Residential building for the year, it is expected, will exceed in dollar volume any previous year on record.

COMMERCIAL FAILURES

Last year's account explained that the 1945 record of commercial failures was exceedingly good, and that it showed a continuation of the steadily improving business failure situation during the past nine years. The 1946 failure record for the first eight months (latest available) shows an increase in failures as compared with the corresponding period of 1945, but not to any unusual degree. The number of business failures reported by Dun and Bradstreet for the first eight months of the year amounted to only 666 as compared with 582 for the same period of 1945. It also compares with 905 for the first nine months of 1944, and with 2,752, 7,641, 9,299. 10,398, and 11,197 for the corresponding nine months period of 1943, 1942, 1941, 1940, and 1939, respectively The eight months' record of 1946 (666) also compares with full yearly records of 12,836 for 1938, 9,490 for 1937, 9,607 for 1936, 12,244 for 1935, 12,091 for 1934, 19,859 for 1933, and 31,822 for 1932, the bottom year of the depression.

With respect to failure liabilities. 1946 also shows a moderate increase as compared with the remarkably good 1945 record. For the first eight months of the year, total liabilities of failures amounted to $29,456,000 as compared with $22,531,000 for the corresponding period of 1945, and with nine months' records of $23,029,000, $37,097,000, $81,387,000, $106,105,000, $124,085,000, and $138,612,000 for 1944, 1943, 1942, 1941, 1940, and 1939. The 1946 eight months' record ($29,456,000) also compares with the following full yearly records of $30,395,000 for 1945, $31,660,000 for 1944, $45,339,000 for 1943, $100,763,000 for 1942, $136,000,000 for 1941, $167,000,000 for 1940, $168,000,000 for 1939, $247,000,000 for 1938, $183,000,000 for 1937, and $928,000,000 for 1932, the bottom year of the depression.

CORPORATE DIVIDENDS

According to the New York Stock Exchange's monthly magazine, *The Exchange,* dividends of 746 separate common stocks listed on the New York Exchange (against 742 dividend payers in 1945), for the first nine months of 1946, exceeded those of the corresponding period of 1945 by 12.6 per cent. Three hundred and twenty paid the same dividend as in the preceding year, 376 increased their dividend distribution, 50 paid lower dividends, and 32 suspended or deferred dividends altogether. In the aggregate the dividend disbursement of all the stocks for the nine months ended Sept. 30 amounted to $1,751,160,000, as compared with $1,555,577,000 during the corresponding period of 1945 and $1,474,967,000 in 1944.

The Stock Exchange's list contains 29 categories of stocks. Of these, 16 of the categories showed exceptionally large gains, namely, "amusement," 84.5 per cent; "aviation," 64.4 per cent; "building," 20.6 per cent; "business and office equipment," 18 per cent; "chemical," 19.2 per cent; "finance," 21.8 per cent; "food," 17.3 per cent; "paper and publishing," 79.8 per cent; "petroleum," 14.3 per cent; "railroad," 10.7 per cent; "retail merchandising," 44.8 per cent; "rubber," 36.2 per cent; "ship operating," 58.2 per cent; "textile," 51.6 per cent; "transportation services," 150.5 per cent; and "other companies," 44.3 per cent. Ten of the categories showed gains ranging from 0.2 per cent to 7.6 per cent, and of these the following important ones should be mentioned: "electrical equipment," 3.2 per cent; "farm machinery," 7.6 per cent; "leather and shoe manufactures," 6.3 per cent;

"machinery and metal products," 2.2 per cent; "mining," 7.6 per cent; "steel, iron and coke," 5.4 per cent; and "utilities," 6.2 per cent. Only three categories out of the 29 showed declines: "automotive," with a decline of 14.6 per cent; "shipbuilding," with 6.4 per cent; and "tobacco," with 1.9 per cent. Commenting on its detailed report, *The Exchange* (October, 1946) makes the following comment:

"Although dividend payments were reduced on 50 issues of common stocks listed on the New York Stock Exchange, and deferred or eliminated on 32 others, the first nine months of 1946 had a sturdy record of disbursements to stockholders. Of the 29 rosters of industrial, public utility, transportation and communication stocks on the Stock Exchange only two disclosed declines from 1945. . . .

"The automotive group, whose operations and profits have been disorganized by strikes and materials' bottle-necks, was one of the two categories to fall back this year. Of the 65 motor and accessory stocks listed, seven which made a return to shareholders during the first three-quarters of 1945 paid out nothing this year. These listed corporations, accounting to a material degree for the decline of 14.6 per cent in automotive dividends, were all suppliers to motor car makers, with the exception of Packard Motor. The retreat of disbursements was also stimulated by a drop from 75 cents to 50 cents in the General Motors dividend several months ago."

INDUSTRIAL PRODUCTION

(1935–1939 average = 100)

	Adjusted for Seasonal Variation			Without Seasonal Adjustment		
	Sept. 1946	Oct. 1945	Sept. 1945	Sept. 1946	Oct. 1945	Sept. 1945
MANUFACTURES						
Durable Goods						
Iron and steel................	184	146	163	p 184	146	163
Machinery..................	p 257	232	230	p 257	232	230
Transportation Equipment.....	p 245	258	273	p 245	258	273
Plate Glass..................	161	50	79	161	50	79
Nonferrous Metal and Products	p 162	144	139	p 162	144	139
Beehive Coke................	p 361	145	224	p 361	145	224
Non-Durable Goods						
Textiles......................	p 165	141	144	p 165	141	144
Meat Packing................	38	129	141	37	133	134
Wheat Flour..................	p 128	129	127	p 140	136	139
Manufactured Food Products...	p 134	143	144	p 160	153	166
Newsprint Consumption.......	117	96	93	119	101	94
Leather and Products.........	(Aug.) 120	112	119	(Aug.) 119	113	118
Petroleum Refining...........	...	...	...	...	...	...
Lubricating Oil...............	(Aug.) 152	120	119	(Aug.) 151	120	119
Tobacco Products.............	157	167	160	166	173	169
Minerals						
Bituminous Coal..............	p 163	110	148	p 163	110	148
Anthracite Coal...............	p 125	120	114	p 125	120	114
Petroleum, Crude.............	p 149	133	138	p 149	133	138
Iron Ore.....................	...	...	...	282	245	281
Silver.......................	(July) 35	54	51	(July) 35	54	51

(p = preliminary).
Source: *Federal Reserve Bulletin.*

GENERAL BUSINESS INDICES

Using the industrial production figures of the *Federal Reserve Bulletin* (adjusted for seasonal variation), it appears that the record for September, 1946 (latest figures available), shows a mixed situation as regards increases or decreases in the important lines of business as compared with 1945, with increases, many of them very substantial, largely in the majority. Thus, increases were shown in 11 leading types of industries, comparing September, 1946, with September, 1945, as follows: iron and steel with an increase from 163 to 184, machinery from 230 to 257, plate glass from 79 to 161, nonferrous metals from 139 to 162, beehive coke from 224 to 361, textiles from 144 to 165, newsprint consumption from 93 to 117, lubricating oil from 119 to 152. bituminous coal from 148 to 163, anthracite coal from 114 to 125, and petroleum crude from 138 to 149. Between the same dates, declines are recorded in four leading industries: transportation equipment with a decrease from 273 to 245, meat packing from 141 to 38, manufactured food products from 144 to 134, and silver from 51 to 35. In contrast to the above, a maintenance of conditions was indicated between September, 1945, and September, 1946, in three leading industries: wheat flour with a slight increase from 127 in September, 1945, to 128 in September, 1946, leather products with an increase from 119 to 120, and tobacco products with a decrease from 160 to 157.

COMMODITY INDEX NUMBERS

Using the U. S. Department of Labor wholesale price index for main groups of commodities, 1946 experienced a very marked upward trend in the price level, namely, from 107.1 for January, 1946, to 124 for September (latest available). The January index figure of 107.1 compares with 104.9 for January, 1945, 103.3 for January, 1944, 101.9 for January, 1943, 96 for January, 1942, and 80.8 for January, 1941. During the first nine months of 1946, this index represents a price increase of 15.8 per cent, and since January, 1941, of 53.3 per cent. The September, 1946, figure of 124 compares with total yearly averages of 105.8 for 1945, 104 for 1944, 103.2 for 1943, 98.8 for 1942, 87.3 for 1941, 78.6 for 1940, 77.1 for 1939, 78.6 for 1938, 86.3 for 1937, 80.8 for 1936, 80 for 1935, 75 for 1934, 66 for 1933, 64.9 for 1932, and 154.4 for 1920, the highest yearly average under this index since the beginning of the century. As already explained under the sections dealing with "Agriculture" and "Manufacturing and Mining Industries," price changes for leading commodities in these fields during 1946 were mostly upward to an unusual extent.

It is also interesting to note that the United Kingdom Board of Trade index shows a very much smaller increase for 1946 than was the case in the United States, namely, from 169.6 for January, 1946, to only 174.9 for September (latest available). The latter figure compares with 167.2 for January, 1945, 164 for January, 1944, 162.1 for January, 1943, 156.4 for January, 1942, and 149.5 for January, 1941. In tabular form, the index numbers of the United States Department of Labor and of the United Kingdom Board of Trade for leading groups of commodities at the close of the year, compared with former years, are as follows:

INDEX NUMBERS OF COMMODITY PRICES

	U. S. Dept. of Labor		U. K. Board of Trade	
	1945	1946	1945	1946
January	104.9	107.1	167.2	169.6
February	105.2	107.7	167.2	169.4
March	105.3	108.9	167.8	169.7
April	105.7	110.2	167.7	170.3
May	106.0	111.0	168.4	170.8
June	106.1	112.9	170.1	171.2
July	105.9	124.7	170.8	174.1
August	105.7	129.1	170.6	174.3
September	105.2	124.0	169.6	174.9
October	105.9		169.4	
November	106.8		169.4	
December	107.1		169.1	

Source: U. S. Dept. of Labor—*Standard Trade & Security*, "Current Statistics." U. K. Board of Trade—"Monthly Digest of Statistics," H. M. Stationery Office.

BUREAU OF LABOR STATISTICS WHOLESALE PRICE INDEX FOR MAIN GROUPS OF COMMODITIES

(1926 = 100)

Commodity Groups	Dec. 14 1946	Dec. 15 1945	Dec. 23 1944	Dec. 18 1943	Dec. 12 1942
All Commodities	139.7	106.7	104.6	102.9	100.5
Farm Products	168.7	131.3	126.2	121.8	112.0
Foods	161.3	108.3	105.7	105.7	104.0
Hides and Leather Products	170.7	119.4	116.7	117.9	118.4
Textile Products	132.5	100.6	99.0	97.2	96.6
Fuel and Lighting Materials	96.1	85.2	83.7	82.6	80.0
Metals and Metal Products	132.7	105.3	103.9	103.9	103.9
Building Materials	151.1	118.8	116.4	113.4	110.0
Chemicals and Drugs	125.4	96.1	104.8	100.3	99.5
Housefurnishing Goods	120.0	106.4	106.1	104.4	104.1
Miscellaneous	107.9	95.0	93.9	93.0	90.3
Raw Materials	154.3	119.7	115.4	112.1	104.7
Semi-manufactured Articles	133.7	96.8	94.7	93.1	92.5
Manufactured Products	134.8	102.6	101.3	100.4	99.8
All Commodities Other Than Farm Products	133.4	101.3	99.8	98.9	98.0
All Commodities Other Than Farm Products and Foods	122.9	100.5	99.0	97.8	96.2

Source: *Commercial and Financial Chronicle.*

YEARLY AVERAGE

U. S. Dept. of Labor

1904	59.7	1926	100.0
1905	60.1	1927	95.4
1906	61.8	1928	96.7
1907	65.2	1929	95.3
1908	62.9	1930	86.4
1909	67.6	1931	73.0
1910	70.4	1932	64.9
1911	64.9	1933	66.0
1912	69.1	1934	75.0
1913	69.8	1935	80.0
1914	68.1	1936	80.8
1915	69.5	1937	86.3
1916	85.5	1938	78.6
1917	117.5	1939	77.1
1918	131.3	1940	78.6
1919	138.6	1941	87.3
1920	154.4	1942	98.8
1921	97.6	1943	103.2
1922	96.7	1944	104.0
1923	100.6	1945	105.8
1924	98.1	1946	124.0
1925	103.5		(September)

LABOR CONDITIONS

With respect to labor conditions, using September as the basis (latest date furnished by the *Federal Reserve Bulletin*), 1946 employment shows large increases along nearly all important lines as compared with the same month of 1945. For iron and steel, the increase (unadjusted for seasonal variations) extended from 125.1 to 146.2, electrical machinery from 171.5 to 207.1, automobiles from 105.9 to 189.7, nonferrous metals from 131.2 to 173.6, lumber and timber and basic products from 120.8 to 150, furniture and lumber products from 92.4 to 119.1, textile mill and fiber products from 91.9 to 105.5, leather products from 88 to 100.4, paper and allied products from 117.5 to 138, printing and publishing from 98.8 to 118, products of petroleum and coal from 123.3 to 143.8, rubber products from 136.5 to 189.4, and miscellaneous industries from 136.5 to 176.4. For the total of durable goods (unadjusted for seasonal variation) the increase in employment from September, 1945, to September, 1946, extended from 144.9 to 169; and, when adjusted for seasonal variation, from 144.8 to 168.8. For the total of nondurable goods (unadjusted) the increase from September, 1945, to September, 1946, extended from 115.6 to 128.4; and, when adjusted, from 114.5 to 127.1. Of all the groups included in the Federal Reserve Bulletin's list, only three showed decreases during the year, from September to September (unadjusted): transportation equipment, exclusive of automotive, from 496.5 to 287.3, chemical and allied products from 172.1 to 167.1, and food products from 138.4 to 132.0.

With respect to payrolls, extraordinarily large changes were shown in nearly all of the leading industries, according to the payroll index furnished by the *Federal Reserve Bulletin*. The leading increases from September, 1945, to August, 1946, are as follows (unadjusted for seasonal variation): iron and steel products from 206.9 to 255.2, electrical machinery from 268.5 to 360, machinery, except electrical from 285.7 to 348.8, automobiles from 151.2 to 308, nonferrous metals from 222.3 to 311.4, and lumber and timber and basic products from 215.3 to 300.3. For durable goods taken as a whole, the payroll figure shows an increase (September, 1945, to August, 1946) from 246.2 to 306, and for non-durable goods an increase from 202.6 to 250.3. Of all the groups included in the *Federal Reserve Bulletin's* list, both durable and non-durable, only two showed payroll decreases during the year, from September, 1945, to September, 1946, namely, transportation equipment, exclusive of automotive, from 844.1 to 534, and chemical and allied products from 292.2 to 290.5. According to the latest available report of the *Federal Reserve Bulletin,* the 1946 showing for leading types of industries, as regards both employment and payrolls, is as follows:

FACTORY EMPLOYMENT AND PAYROLLS

	Employment						Payrolls		
	Adjusted for Seasonal Variation			Unadjusted for Seasonal Variation			Unadjusted for Seasonal Variation		
	Sept. 1946	Sept. 1945	Sept. 1944	Sept. 1946	Sept. 1945	Sept. 1944	Aug. 1946	Sept. 1945	Sept. 1944
Durable Goods									
Iron and Steel				146.2	125.1	170.0	255.2	206.9	319.3
Electrical Machinery				207.1	171.5	285.1	360.0	268.5	520.7
Machinery, Except Electrical				201.9	172.7	225.0	348.8	285.7	421.4
Transportation Equipment, Except Automotive				287.3	496.5	1,396.1	534.0	844.1	2,931.8
Automobiles				189.7	105.9	174.7	308.0	151.2	311.1
Nonferrous Metals				173.6	131.2	179.5	311.4	223.3	336.9
Lumber and Timber Basic Products				150.0	120.8	115.8	300.3	215.3	215.9
Furniture and Lumber Products				119.1	92.4	103.4	239.3	164.0	189.3
Stone, Clay and Glass Products				139.7	105.7	112.1	253.2	175.7	188.2
*Total of Durable Goods	168.8	144.8	224.0	169.0	144.9	224.3	306.0	246.2	460.6
Non-Durable Goods									
Textile Mill and Fiber Products				105.5	91.9	95.4	231.0	169.7	171.3
Apparel and Other Finished Products				134.9	115.3	110.3	277.5	208.4	199.1
Leather Products				100.4	88.0	90.1	198.2	160.2	160.6
Food Products				132.0	138.4	138.5	250.3	226.6	215.5
Tobacco Products				91.7	89.5	88.0	186.2	176.0	163.0
Paper and Allied Products				138.0	117.5	116.7	253.9	200.7	193.1
Printing and Publishing				118.0	98.8	97.1	190.5	147.7	136.0
Chemical and Allied Products				167.1	172.1	205.7	290.5	292.2	361.0
Products of Petroleum and Coal				143.8	123.3	126.0	246.3	212.1	220.7
Rubber Products				189.4	136.5	160.7	343.2	231.3	294.5
Miscellaneous Industries				176.4	136.5	168.5	328.2	239.2	324.0
*Total of Non-Durable Goods	127.1	114.5	118.3	128.4	115.6	120.1	250.3	202.6	209.8

* Under "Adjusted for Seasonal Variation," only totals are furnished, instead of figures for individual industries.

Source: *Federal Reserve Bulletin*, November, 1946.

THE SECURITY AND MONEY MARKETS

By S. S. Huebner
Professor, University of Pennsylvania

GENERAL

Stock market movements during 1946 indicated two main trends: (1) a slight appreciation in the price level during the first five or six months, depending upon the group of stocks under consideration, and (2) a bear market of very substantial proportions following June and continuing with increased momentum through the months of July, August, September, and October. June, 1946 seemed to have marked the end of the 1943-1946 bull market.

The average monthly price level for the leading groups of stocks, at the end of the first ten months of the year (latest available), showed a depreciation of 18.1 per cent as contrasted with an increase of 22.3 per cent during the same period of 1945. For the four leading groups of stocks, the depreciation for the first ten months of the year, comparing the January and October monthly averages, was 32.4 per cent for railroad stocks, 17.3 per cent for industrials, 16 per cent for public utilities, and 17 per cent for the copper group. The total volume of transactions on the New York Stock Exchange nearly reached the 364,000,000-share figure (about the same as the 377,000,000 total for 1945), while transactions on the Curb Market (137,000,000 shares) were also about the same as those for 1945. Million-share days on the New York Stock Exchange were the general rule throughout the year, and during two months of the first ten months of the year the daily average well exceeded 2,000,000 shares. This activity compares with about the same record for 1945.

1946 MARKET TRENDS

Using a combined average for the leading groups of stocks, railroads, industrials, and public utilities (Standard and Poor's Index), the 1946 market was characterized by two distinct trends, with only slight variations during the first five months. These two price trends of the year may be indicated as follows: (1) a slight rise from January to June of monthly averages, from 143.1 to 148.5, or 3.8 per cent, and (2) a major decline from June to October, inclusive, from 148.5 (May average) to 117.2 (October average), a decrease of 21 per cent. Impressive as the aforementioned decrease is, it should be noted that many of the leading corporate shares experienced a substantially greater decline. Using ten giants for illustrative purposes—Allied Chemical and Dye, American Smelting and Refining, American Telegraph and Telephone, American Tobacco, Bethlehem Steel, Chrysler Corporation, E. I. du Pont de Nemours, General Motors, Standard Oil of New Jersey, and United States Steel—the average high price for the common stocks for 1946 of 132.1 compares with the average closing price on Nov. 26, 1946, of 92.5, or an average decline of 30 per cent.

Bonds, using the Standard and Poor's Index for corporate bonds, maintained for the first nine months of 1946 the unusually high price level reached by the close of 1945, the January, 1946 high average being 120.2 and the September average 119.1. During October, however, this average declined rather drastically from 119.1 (September) to 116.2 (October), a decline of 2.9 points. Comparing January of 1946 with October of 1946, bonds showed an average price depreciation of approximately 3.3 per cent.

Throughout 1945, as explained last year, "the stock market increasingly threw off the cautious hesitation and selectivity which characterized the market during 1944." The war having ended, an ever increasing number of factors were stressed by the speculative community as supporting the bull side of the market. The following seemed to command the most attention: a strong undercurrent of inflation thinking; an enormous pressure of idle funds seeking investment at a time when the volume of good bonds was greatly depleted owing to refunding operations; favorable corporate earnings and increased dividend declarations, whereas the return on good bonds was exceedingly small; the prospect of Federal tax legislation designed to reduce corporate as well as individual taxes; the prospect of the abolition of governmental price and other economic restrictions; and the widely held belief in a huge postwar boom to meet the needs of a foreign war-torn world as well as to fill the greatly depleted backlogs of domestically needed goods, repairs and new construction.

This bull psychology continued during the first half of 1946. By May and June, however, the bullish enthusiasm seemed to vanish and increasingly bearish considerations gained the upper hand. Various events made it clear that the hoped for reconversion of business from war to peace and the prospective industrial boom were not to materialize immediately, if at all. An enormous increase in the number of industrial strikes, extending to the major industries representing iron and steel, coal, electrical power, automotive manufacturing, etc., took place throughout the country. Most of these strikes proved victories to labor in the form of substantial wage increases, whereas industry itself could not obtain compensating price increases owing to governmental restrictions. The sharp inflationary trend induced these labor upheavals, and they in turn caused commodity price increases, thus producing a price spiral the end of which may not yet be contemplated.

At the time of this writing, the drastic decline of September and October seems to have been arrested, at least for the time being. In fact, price stabilization seems to have been achieved shortly after the November election with its landslide drift to the right. Although many deadlocks seemed inevitable, the general interpretation given to the election results is one of hope for greater conservatism and fairer treatment of business, reduction of the tax burden for both corporations and individuals, general removal of governmental emergency powers, and greater consideration for private enterprise.

INDUSTRIAL SHARE PRICES

The two-fold trend of the 1946 stock market is indicated by the monthly stock averages of the Standard and Poor's barometer figures for various leading groups of stocks. Fifty representative industrial stocks had an average price of 172.8 for January, as compared with an average of 166.7 for December, 1945, and 131.8 for January of 1945. Thereafter the succeeding two months showed a minor decline, the averages for February and March being 173.1 and 167.8, respectively. Following March an increase occurred during April and May, namely, to 179.5 and 179.8, the latter figure being two points above the January average. In June the bear market of the latter half of the year began its course, with the average for that month standing at 177.8. For July the average moved still lower to 173.5, and in August to 170.5. Thereafter the decline was much more violent, namely, to 145.9 for September and 142.9 for October. Between May and October the market in this group experienced a depreciation of 20.5 per cent.

The October average of 142.9, when compared with the January average of 172.8, shows a decline in the average monthly price level of 17.3 per cent. This year's October average of 142.9 compares with 159.7 for October, 1945; 127.1 for October, 1944; 117.3 for October, 1943; and with reference to approximately the same period (November), 95.2 for 1942; 93.8 for 1941; 106.9 for 1940; 123 for 1939; 129.1 for 1938; 107.8 for 1937; 168 for January, 1937, and 53.5 for the yearly average of 1932, the bottom year of the 1930-36 depression. The 1946 decline in this group of 17.3 per cent for the first ten months compares with a rise for the same period of 1945 of 21.1 per cent, and with a rise for the same period of 1944 of slightly over 8.2 per cent. It is interesting to note that in October, 1946, the average of 142.9 is about 2.7 times the 1932 depression yearly average of 53.5.

RAILROAD SHARES

With respect to 20 representative railroad stocks, the monthly price average of the Standard and Poor's barometer figures showed the same trends already explained for the industrial list. For January, 1946, the monthly average stood at 66.7. Thereafter the monthly average declined to 66.3 for February, to 62.7 for March, rose slightly to 63.7 for April, and 63.6 for May. By June the average had again increased to 66.1, or approximately to the January average of 66.7. For the first half of the year, therefore, there was an approximate maintenance of the January price level. Following June, the price declined to 62.8 for July and to 59.9 for August. Following August, however, the bear market in rails became much more drastic, the average monthly price level standing at 48.3 for September and 45.1 for October (latest monthly figure available). The October average of 45.1, when compared with the January average of 66.7, shows a decrease of 32.4 per cent. It compares with 59 for October, 1945; 42.1 for October, 1944; 37.5 for October, 1943; 29.7 for October, 1942; 27.8 for November, 1941; 30.1 for November, 1940; 33.5 for November, 1939; 31.7 for November, 1938; 33.1 for November, 1937; 47 for January, 1936; and with yearly averages of 36 for 1935; 42.9 for 1934; 39 for 1933; and 26.8 for the bottom depression year of 1932. It is interesting to compare the October, 1946 average of 45.1 with the 1932 low June monthly average of 15.0.

PUBLIC UTILITIES

For the public utility group the 1946 average price movement reflects the same trends shown by the other major groups of shares. According to the Standard and Poor's barometer average for 20 representative public utility stocks, the monthly average rose, with minor variations, from 88.5 for January to 94.5 for June, an appreciation of 6.8 per cent. During the intervening months averages stood at 89.5 for February, 88.8 for March, 93.7 for April, and 94.3 for May. Following June there was a decline to 90.2 for July and to 88.4 for August. Following August the bear market in utilities became more intense, the average for September being 75.5 and for October 74.3. The October average of 74.3, when compared with the January average of 88.5, shows a decline in the utility price level of 16 per cent. The October, 1946, average of 74.3 compares with 77.3 for the corresponding month of 1945; 55.9 for October, 1944; 51 for October, 1943; 33.7 for October, 1942; 37.9 for November, 1941; 59.8 for November, 1940; 69.5 for November, 1939; 66.4 for November, 1938; 63.3 for November, 1937; 100.9 for January, 1937; 88.4 for January, 1936; and with yearly averages of 62.8 for 1935; 66.5 for 1934; 81.8 for 1933; and 88.7 for 1932.

COPPER SHARES

For a representative list of seven copper stocks, the average monthly price level for 1946 again shows trends similar to those already noted for the industrial, railroad, and public utility groups. From January to May the average rose gradually, with minor interruptions, from 132.2 to 142.8, or 7.3 per cent. Thereafter a decline occurred to 139.7 for June, 138.8 for July, and 133.9 for August. Following August the decline was very substantial to 109.2 for September and 109.7 for October. The October average of 109.7, when compared with the January average of 132.2, shows a depreciation in this group of 17 per cent. The 1946 October average of 109.7 compares with 110.6 for October, 1945, and with October averages of 82.8 for 1944, 77.4 for 1943, 80.9 for 1942, and 83.4 for 1941.

COMBINED AVERAGES

Combining the stocks used by the Standard and Poor's index for industrials, railroads, and public utilities, the average monthly 1946 price level rose from 143.1 for January to 148.5 for May (3.8 per cent appreciation), then declined to 147.6 for June, 143.4 for July, and to 140.6 for August. Thereafter the decline was very rapid to 119.9 for September and 117.2 for October. The October average of 117.2, when compared with the January average of 143.1, shows a depreciation for the first ten months of the year of 18.1 per cent. This compares with an appreciation of 22.3 per cent for the same period of 1945, and with an appreciation of 8.2 per cent for the same period of 1944. It should also be pointed out that the 1946 October average of 117.2 compares with 131 for the corresponding month of 1945, and with 102.5 for the same month of 1944.

TABLE I

SECURITY MARKET PRICES

	Railroads 20 stocks		Industrials 50 stocks		Public Utilities 20 stocks		*Copper 7 stocks		Stocks 90 stocks	
	1945	1946	1945	1946	1945	1946	1945	1946	1945	1946
January	49.3	66.7	131.8	172.8	57.7	88.5	91.2	132.2	107.1	143.1
February	50.4	66.3	135.8	173.1	61.3	89.5	94.9	136.3	110.7	143.5
March	50.5	62.7	135.8	167.8	61.2	88.8	92.7	131.4	110.6	139.2
April	52.5	63.7	138.8	179.5	63.5	93.7	95.0	139.1	113.4	148.2
May	54.7	63.6	143.9	179.8	66.5	94.3	95.9	142.8	117.7	148.5
June	58.6	66.1	145.2	177.8	69.9	94.5	97.2	139.7	119.8	147.6
July	56.6	62.8	141.7	173.5	71.2	90.2	94.3	138.8	117.4	143.4
August	53.4	59.9	143.3	170.5	69.8	88.4	91.3	133.9	117.7	140.6
September	56.2	48.3	153.7	145.9	72.9	75.5	99.6	109.2	125.8	119.9
October	59.0	45.1	159.7	142.9	77.3	74.3	110.6	109.7	131.0	117.2
November	62.7		163.5		83.4		120.7		135.3	
December	64.0		166.7		83.2		126.3		137.6	

* Copper figures use 1935–1939 as a base period. All other figures use 1926 as a base period.
The above figures are an average for the month based on daily closing prices, except for Copper, which are weekly closing prices.
(Source of data—Standard & Poor's *Trade and Securities, Current Statistics*.)

MARKET VALUE OF SHARES

Using the figures of the New York Stock Exchange, the total value of 1,756,181,000 of listed shares on the Exchange stood at $66,114,907,000 at the beginning of November, 1946. This value compares with $69,561,000,000 at the beginning of November, 1945; $53,087,000,000 at the beginning of November, 1944; $45,101,000,000 at the close of November, 1943; and $37,374,000,000 at the close of November, 1942. The 1946 Nov. 1 value of $66,115,000,000 may also be compared with $37,882,000,000 on Dec. 1, 1941; $41,848,000,000 at the same date in 1940; $45,500,000,000 in 1939; $46,081,000,000 in 1938; $40,716,000,000 in 1937; and with $62,618,000,000 for March 1937, the high mark before the bear market of 1937-38 began its course.

MONTHLY STOCK AVERAGES

The average monthly "All Stock Price Index" as furnished by the New York Stock Exchange, stood at 79.3 for Nov. 1, 1946, as compared with 80.2 for Nov. 1, 1945; 69.7 for the corresponding period of 1944; 59.8 for 1943; 50.6 for 1942; 51.6 for 1941; 57 for 1940; 63.2 for 1939; and 64.1 for 1938. The Nov. 1, 1946 average of 79.3 compares with the following Dec. 1 averages for preceding years: 37.8 for 1937; 56.01 for 1936; 45.85 for 1935; 35.59 for 1934; 32.78 for 1933; and 25.61 for 1932.

VOLUME OF STOCK TRANSACTIONS

Stock transactions on the New York Stock Exchange during 1946 showed about the same volume of sales as 1945, namely, 363,709,312 shares as compared with 377,564,000 shares for 1945, 263,074,000 shares for 1944, and 278,742,000 shares for 1943. The current year, as well as 1945, indicates a departure from the comparative stock market stagnation that has prevailed since 1938. During 1946 only June, July, and August showed total transactions below 22,000,000 shares per month. Every other month during the first ten months of the year showed a monthly total in excess of 25,000,000 shares. January and September record the largest totals of 51,510,000 and 43,450,000 shares, respectively. February, April, May, and October exceeded the 30,000,000 share mark. With the exception of July and August, when the daily average of transactions (excluding Saturdays) was 936,000 and 946,000 shares, respectively, the daily average for every month from January to October was well in excess of the million-share total. January and September showed daily averages in excess of 2,000,000 shares. The 1946 total of 363,709,312 shares compares with 377,564,000 shares for 1945; 263,074,000 for 1944; 278,741,000 for 1943; 125,678,000 for 1942; 170,534,000 for 1941; 207,605,000 for 1940; and 1,125,000,000 for 1929, the highest figure on record.

SHARES TRADED ON THE NEW YORK STOCK EXCHANGE

	1946		1945	
	Shares	Daily Average, Excluding Sat.	Shares	Daily Average, Excluding Sat.
January	51,510,000	2,142,000	38,995,000	1,632,000
February	34,093,000	1,711,000	32,613,000	1,653,000
March	25,664,000	1,092,000	27,492,000	1,185,000
April	31,427,000	1,369,000	28,270,000	1,256,000
May	30,410,000	1,302,000	32,024,000	1,323,000
June	21,717,000	1,086,000	41,310,000	1,759,000
July	20,595,000	936.000	19,977,000	951,000
August	20,807,000	946,000	21,714,000	1,034,000
September	43,450,000	2,173,000	25,135,000	1,192,000
October	30,384,000	1,279,000	35,476,000	1,545,000
November	23,819,000	1,173,000	40,406,000	1,923,000
December			34,151,000	1,573,000

YEARLY TOTALS OF SHARE SALES

1920	226,640,400	1934	323,871,840
1921	172,712,716	1935	381,666,197
1922	258,652,519	1936	496,063,099
1923	236,115,040	1937	409,468,885
1924	281,991,597	1938	297,446,059
1925	454,404,733	1939	262,015,799
1926	450,845,255	1940	207,605,359
1927	576,563,218	1941	170,534,363
1928	919,661,825	1942	125,677,963
1929	1,124,991,490	1943	278,741,765
1930	810,038,161	1944	263,074,018
1931	579,921,426	1945	377,563,575
1932	425,235,829	1946	363,709,312
1933	654,874,210		

On the New York Curb market sales during 1946 totaled 137,220,000 shares, as compared with 143,337,000 shares for 1945, 71,062,000 shares for 1944, and 71,382,000 shares for 1943. The 1946 total of 137,220,000 shares also compares with 22,328,000 shares for 1942; 34,691,000 for 1941; 43,000,000 for 1940; and 474,000,000 for 1929, the largest on record.

THE BOND MARKET

Bond sales on the New York Stock Exchange during 1946 indicated a very dull market, the total being $1,364,174,150, as compared with $2,261,985,000 for 1945; $2,694,704,000 for 1944; $3,254,716,000 for 1943; $2,313,000,000 for 1942; $2.114,000,000 for 1941; and $1,672,000,000 for 1940.

During 1946, bonds maintained an unusually high and fairly steady price level throughout the year, although the price trend was downward. Using Moody's Bond Prices as a basis

(*Commercial and Financial Chronicle,* Nov. 28, 1946), the average for domestic corporation bonds stood at 119 at the end of January 1946. By June 26 the average price had declined to 118.6. Thereafter the average price fluctuated narrowly from month to month until the price stood at 116.22 on Nov. 26 (the latest available). This compares with 116.8 for the corresponding date of 1945, 113.12 for 1944, and 110.52 for 1943. It also compares with high and low averages for 1942 of 107.62 and 106.04, with a high and low for 1941 of 108.52 and 105.52, and with high and low for 1940 of 106.74 and 99.04. The Nov. 26, 1946, price is 0.58 points below the price on the corresponding date in 1945. The high and low averages for the year 1946 were 120.22 and 116.22, respectively. United States government bonds stood at the high average level of 121.67 on Nov. 26, 1946, compared with high and low for the year of 126.28 and 120.7, and with high and low for 1945 of 123.79 and 120.55, with 120.4 and 119.2 for 1944, and 119.63 and 113.02 for 1940.

The extraordinarily high price of bonds has brought the average bond yield to very low figures. According to Moody's Bond Yield Average, the average yield for all of the domestic corporation bonds was down to 2.84 per cent on Nov. 26, 1946. However, for choice bonds (the Aaa group) the yield was only 2.60 per cent as compared with 2.61 per cent a year ago, 2.71 per cent in 1944, 2.74 per cent in 1943, 2.82 per cent in 1942 and 2.8 per cent in 1941.

Using the Standard and Poor's barometric averages for a representative group of corporate bonds, the monthly high average stood at 120.2 for January 1946. Thereafter the price fluctuated slightly from month to month, the monthly high average standing at 120.2 for February, 120.3 for March, 120.3 for April, 119.8 for May, 119.8 for June, 119.5 for July, 119.3 for August, 119.1 for September, and 116.2 for October (latest available). The year thus shows a remarkably stable bond market at an unusually high price level, except for the last month (October) when the average price declined by 2.9 points. It should also be noted from the accompanying table that the monthly fluctuation between high and low was very small for the first seven months of the year. September and October, however, showed a range between high and low of as much as 3.3 and 3.4 points, respectively.

COMPOSITE BOND PRICES—1946

	High	Low
January	120.2	119.1
February	120.2	119.9
March	120.3	120.0
April	120.3	119.4
May	119.8	119.4
June	119.8	119.2
July	119.5	118.6
August	119.3	118.6
September	119.1	115.8
October	116.2	114.8
November		
December		

All bonds listed on the New York Stock Exchange (930 issues) showed a total market value of $140,245,280,000 at the beginning of November 1946. This compares with $128,741,461,000 at the corresponding date in 1945, and with $101,801,493,000 on Nov. 1, 1944, $90,969,000,000 on Dec. 1, 1943, $64,544,000,000 on Dec. 1, 1942, $54,813,000,000 in 1941, and $50,755,000,000 in 1940. The substantial increase in the 1946-1943 figures is largely attributable to the issue of large amounts of United States Government securities during those years. On Nov. 1, 1946, the average price of the aforementioned listed bonds stood at 102.46, which compares with 103.16 at the corresponding date of 1945, 100.71 at the same date of 1944, and with 99.02 in 1943, 96.11 in 1942, 94.8 in 1941, 93.58 in 1940, 91.24 in 1939, 90.34 in 1938, and 81.36 in the bottom depression year of 1932.

THE MONEY MARKET

With respect to both time and call loan rates, the 1946 tendencies for the first seven months represent an exact duplication of the situation prevailing during 1945 and the preceding 11 years. As was the case during previous years, in fact as far back as 1933, New York time and call loan rates were quoted at only about 1 per cent or under. Beginning with a January average of 0.75 per cent for four to six months prime commercial paper, and 1 per cent for call loans in New York, the average monthly rate remained fixed at these low figures for the first seven months of the year. During August and September, however, time rates rose to an average of 0.81 per cent, whereas call loan rates during those two months rose from 1 per cent to 1.3 per cent and 1.38 per cent, respectively.

According to the New York Stock Exchange's figures (Nov. 1, 1946), the borrowings of New York Stock Exchange members on collateral security continued to show a very small volume. The total of $371,000,000 for Nov. 1, 1946, compares with $911,000,000 for Nov. 1, 1945, $878,000,000 for 1944, $718,000,000 for 1943, $342,000,000 for 1942, $436,000,000 for 1941, $362,000,000 for 1940, and $4,017,000,000 for 1929.

INTEREST RATES

	Commercial Paper		Call Loans	
	4–6 Months		New York Stock Exchange Renewals—Average of Daily Renewal	
	1945	1946	1945	1946
January....	0.75	0.75	1.00	1.00
February...	0.75	0.75	1.00	1.00
March.....	0.75	0.75	1.00	1.00
April......	0.75	0.75	1.00	1.00
May.......	0.75	0.75	1.00	1.00
June.......	0.75	0.75	1.00	1.00
July.......	0.75	0.75	1.00	1.00
August.....	0.75	0.81	1.00	1.30
September .	0.75	0.81	1.00	1.38
October....	0.75		1.00	
November .	0.75		1.00	
December..	0.75		1.00	

Source: Standard & Poor's *Trade and Securities, Current Statistics*, November, 1946.

BANKING AFFAIRS

By Robert W. Bachelor

Director of the Research Council, American Bankers Association

GENERAL

The year 1946 was a year of transition from war finance to the financing of commerce and industry. The beginning of the year brought to completion the Victory Loan which provided the Treasury with unneeded cash balances that equaled $25,000,000,000 in December 1945, and in January and February 1946. These deposits were gradually reduced by retiring the short-term debt held by the banks. In the first quarter of 1946, loans to brokers and others for the purpose of purchasing and carrying United States securities were large, as required to complete the Victory Loan. It required substantial effort on the part of the banks to have these loans reduced during the remainder of the year.

Business and industry began to borrow heavily as soon as Treasury financial requirements were met, and commercial loans expanded during the remainder of the year. This more than offset the reduction in security loans. At the same time, consumer credit and loans on urban real estate and farm lands increased substantially.

Although total deposits of all banks declined as government deposits were reduced, the effective money supply grew slowly but steadily. The so-called "war loan deposits" in banks have few of the characteristics of ordinary deposits of individuals and corporations. In 1946, most of these war loan deposits were never used and never entered into the supply of money. Currency in circulation was almost stabilized at nearly $29,000,000,000, and the monetary gold stock reversed its trend and began to increase instead of decrease.

Federal Reserve bank credit fluctuated between $23,000,000,000 and $24,000,000,000 during 1946. There was a slight increase toward the end of the year, accompanying the increased demand for currency. Money outside the Treasury and Federal Reserve banks approximated $29,000,000,000 at the year-end. Excess reserves of the commercial banking system were maintained just below $1,000,000,000 during most of the year.

LOANS AND INVESTMENTS

Total credit extended by banks at the end of 1946 was somewhat below that outstanding one year earlier as the Treasury retired short-term securities held by the banks by means of cancelling a large part of the $25,000,000,000 of government deposits due from those banks at the beginning of the year.

Total loans of banks increased nearly $3,000,000,000 during the year, and there was a redistribution of borrowing by purpose for which the loan was granted. At the beginning of 1946, the Victory Loan was in progress. Bank loans to brokers and dealers, and to others, for the purpose of purchasing and carrying United States Government securities, were several times larger than a normal figure. The Federal Reserve System advised banks and the public that efforts should be made to reduce the amount of loans for this purpose. At the same time there was a sharply increased demand for consumer loans, real estate loans, and business loans. Many businesses found themselves in need of working capital as interruptions delayed their marketing schedules and as production costs increased. Total loans increased by $3,000,000,000, notwithstanding a liquidation of $2,000,000,000 in security loans.

OWNERSHIP OF DEPOSITS

Demand deposits increased further in 1946, owing largely to increased loans for business purposes and to consumers. Personal deposits (including those of farmers) continued to increase through 1946, while there was little change in the amount of demand deposits owned by businesses. Deposits owned by manufacturing and mining concerns declined somewhat, while amounts held by trade and financial businesses increased but at a slower rate than during previous years. Federal Reserve estimates of ownership of demand deposits, as of July 31, 1946, were:

(Billions of dollars)

Total domestic business	44.9
Corporate	32.8
Unincorporated	12.1
Personal	27.6
Farmers	6.2
Others	21.4
Other (trust funds, foreigners, non-profit ass'ns.)	5.0
Total	77.5

TREASURY OPERATIONS

During the calendar year 1946, cash income and cash outgo of the Treasury were approximately in balance, and there appeared to be a reasonable prospect of keeping them about equal in amount. Under these circumstances, the Treasury began to reduce its deposits with commercial banks by retiring much of the outstanding short-term debt as it matured. Much of this debt was owned by the banks. The results were reduced deposits and reduced holdings of United States securities by the commercial banking system.

Commercial bank holdings of United States Government securities were reduced from $92,500,000,000 at the end of February 1946 (after the Victory Loan campaign was completed), to $78,700,000,000 at the end of September, and fell still further in the final quarter of the year. United States Government deposits at commercial banks declined $17,400,000,000 in the first ten months of 1946. Some of this was shifted to deposits of individuals to the extent that retired debt was held by non-bank investors.

Accompanying the small retirement of the public debt, liquid asset holdings of individuals and businesses made almost no further growth. During the war years, almost the entire increase in the Federal debt held by the public was reflected in increases in currency, demand or time deposits at banks, and United States Government securities, owned by individuals or businesses.

The Treasury launched a campaign to continue the sale of Savings Bonds to the public, and the banks cooperated in this work. It is hoped that new sales will equal redemptions of securities now held by the public.

INTEREST RATES

Open market interest rates rose slightly as gross deposits shrank when Treasury cash income equaled cash outgo and so-called war loan deposits were cancelled and short-term Federal indebtedness reduced. The discount rate of ½ per cent on discounts collateralled by United States Government securities having a maturity of not over one year was withdrawn by most Federal Reserve banks in late April. Rates of interest charged customers by banks continued down at country banks, but increased somewhat at the larger city institutions. Interest rates charged customers on new loans at banks in 19 cities averaged 2.09 per cent in December, 1945, compared with 2.32 per cent for September, 1946. Open market rates on United States Government three to five-year taxable notes were reported at 1.10 per cent in January, 1946 and 1.25 per cent in the final week of November. Stock Exchange call loan renewals which were quoted at 1 per cent during the war years and through July 1946, were advanced in August to 1¼-1½ per cent. Yields on high-grade municipal bonds increased slightly, although yields on high-grade corporates closed the year at about the same level as one year previous.

BANKING OFFICES

During 1946 and 1945 there were no bank failures. The number of banks in operation reached a low of 14,535 on Dec. 31, 1944, and increased from that date to 14,592 on Oct. 31, 1946. The number of banks increased by 39 during the first ten months of 1946, but the number of branches and additional offices decreased by one. There was little growth in branch banking during either 1946 or 1945.

FOREIGN EXCHANGE AND BANKING

In the closing days of 1946 the International Monetary Fund announced parities on currencies of countries that are members of the fund. Most of these official rates were unchanged from earlier in 1946. Effective July 5, the Canadian dollar was adjusted to parity with the United States dollar, from a previous value of 90.9¢. Closing quotations for the year were a few cents below par. Effective July 13, the Swedish krona was adjusted to 3.6¢ to the United States dollar, from a prior value of 4.2 kroner per dollar. This new rate was held throughout the remainder of the year. There was reasonable stability in most of the other currencies that are important in international dealings. The pound sterling rate was stable and the British Government drew upon proceeds of the $3,750,000,000 loan authorized by a special act of Congress approved July 15, 1946.

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

The International Bank for Reconstruction and Development was organized, and a staff was assembled. No securities have yet been issued or offered in the markets of any country. Some educational work was undertaken to acquaint bankers and bank supervisory authorities with the merits of prospective issues as investment securities. The State of Wisconsin ruled that obligations of the International Bank were not legal investments for banks organized under its laws.

GOLD AND SILVER

Monetary gold stock of the United States increased $500,000,000 during 1946, reversing the downward trend that prevailed from early 1943 through 1945. Domestic production was augmented by small imports, chiefly from Canada, and by releases from earmark for the account of countries that required dollar balances.

An Act of Congress approved July 31, 1946 authorizes the Secretary of the Treasury to sell or lease silver to industry at not less than 90½¢ per ounce. The seigniorage on silver mined after July 1, 1946 is reduced to 30 per cent, thus assuring a price of 90½¢ per ounce for domestically produced silver.

BANK EARNINGS

Earnings of banks continued satisfactory. Net profits of Federal Reserve member banks after taxes, for the first six months of 1946. were at the annual rate of 11 per cent of capital accounts. This is essentially the same rate earned in 1945.

Reductions of large amounts of short-term low-yielding United States Government securities were offset to some extent by the expansion of loans to customers at substantially higher interest rates. All items of expense increased substantially. Salary and wage payments for the first half of 1946 were 20 per cent greater than for the corresponding period of 1945. Interest rates paid customers on time and savings deposits were advanced by many banks.

DEPOSIT INSURANCE

The financial statement of the Federal Deposit Insurance Corporation dated June 30, 1946 disclosed a capital and surplus of approximately $1,000,000,000. Maple T. Harl, chairman of the Corporation, indicated that this sum was ample to meet any prospective liabilities of the corporation in insuring bank deposits of the nation. He suggested that the present rate of assessment on banks for deposit insurance (1/12 per cent per annum) be continued until the capital funds supplied by the United States Treasury and the Federal Reserve banks were returned without reducing the unobligated capital funds of the corporation below $1,000,000,000. Legislation to accomplish these purposes was introduced into the Congress but failed to receive consideration before the end of the session. The American Bankers Association, for years, has advocated the return of government capital in the Federal Deposit Insurance Corporation.

BANKING LEGISLATION

The increasing volume of government checks issued each year, especially during the war, burdened the banks with liabilities unlimited as to time, as endorsers. Many of these checks were cashed for individuals who had no bank accounts. The United States Treasury, after many years of discussion, finally agreed to the Act of March 6, 1946, that, in effect, gives a six-year statute of limitations on claims by the United States against banks or others who handle a government check that later is found to have a forged or unauthorized endorsement.

FEDERAL RESERVE SYSTEM

Effective Jan. 21, 1946, banks and brokers were forbidden to extend credit on listed securities for the purpose of purchasing or carrying securities. Previous margin requirements had been 75 per cent. Declining stock prices in the last half of 1946 brought no relaxation in margin requirements under Regulations T and U.

Some modification in Regulation W, governing the extension of installment credit, was announced, effective Dec. 1, 1946. The actual effect of this revision was negligible, since there was no relaxation in terms of payment for articles making up the bulk of installment purchases.

The thirty-second annual report of the Board of Governors of the Federal Reserve System, released in mid-1946, recommended for consideration by the Congress "the provision of additional powers which could be used to prevent further unnecessary expansion of bank credit without raising the cost of Treasury financing." The powers requested would empower the Board to limit the amounts of long-term marketable securities, both public and private, that any commercial bank may hold against its net demand deposits. Also the Board would be empowered to require all commercial banks to hold a specified percentage of Treasury bills and certificates as secondary reserves against net demand deposits. These secondary reserves would be in addition to the cash reserves required by present laws and regulations. Federal Reserve spokes-

ASSETS AND LIABILITIES OF ALL ACTIVE BANKS IN THE UNITED STATES,[1] CLASSIFIED BY KIND OF BANK, JUNE 30, 1946

	Total All Banks[2]	National Banks	State Commercial Banks[3]	Mutual Savings Banks	Private Banks[2]
Number of banks	14,626	5,018	9,039	533	36
	(In millions of dollars)				
ASSETS					
Loans and discounts:					
Loans on real estate	10,146	2,748	3,115	4,280	3
Other loans, including rediscounts and overdrafts	21,547	11,750	9,669	66	62
Total loans and discounts	31,693	14,498	12,785	4,346	65
Securities:					
U. S. Government obligations:					
Direct obligations	96,470	47,465	37,499	11,428	78
Guaranteed obligations	27	7	17	3	*
Total	96,497	47,472	37,516	11,431	78
Obligations of states and political subdivisions	4,165	2,454	1,598	63	50
Other bonds, notes, and debentures	4,522	1,946	1,489	1,081	6
Corporate stocks, including stocks of Federal Reserve Banks	538	144	218	170	5
Total securities	105,722	52,016	40,821	12,746	139
Total loans, discounts, and securities	137,416	66,515	53,605	17,092	204
Currency and coin	1,729	806	837	85	2
Balances with other banks, including reserve balances[4]	31,732	17,856	13,157	660	58
Bank premises owned, furniture and fixtures	1,017	496	427	93	*
Real estate owned other than bank premises	51	10	22	18	*
Investments and other assets indirectly representing bank premises or other real estate	74	47	22	5	*
Customers' liability on acceptances outstanding	104	58	35	—	11
Interest, commissions, rent, and other income earned or accrued but not collected Other assets	580	205	306	68	1
Total assets	172,702	85,993	68,411	18,021	276
LIABILITIES					
Deposits of:					
Individuals, partnerships, and corporations:					
Demand	76,905	42,560	34,181	11	154
Time	48,481	17,174	15,054	16,229	23
Total	125,386	59,734	49,235	16,240	177
U. S. Government and postal savings	13,558	7,696	5,860	2	*
States and political subdivisions	6,680	4,007	2,669	2	2
Banks[4]	12,364	7,817	4,490	*	57
Other deposits (certified and cashiers' checks, etc.)	2,361	1,241	1,114	3	2
Total deposits[4]	160,349	80,495	63,368	16,248	238

	Total All Banks[2]	National Banks	State Commercial Banks[3]	Mutual Savings Banks	Private Banks[2]
	(In millions of dollars)				
Bills payable, rediscounts, and other liabilities for borrowed money	94	24	67	1	2
Acceptances executed by or for account of reporting banks	123	71	40	—	12
Interest, discount, rent, and other income collected but not earned Interest, taxes, and other expenses accrued and unpaid Other liabilities	959	529	370	58	2
Total liabilities	161,525	81,119	63,845	16,307	254
CAPITAL ACCOUNTS					
Capital notes and debentures	72	—	68	5	—
Preferred stock	127	47	80	—	—
Common stock	3,052	1,636	1,409	—	7
Surplus	5,216	2,100	1,946	1,157	12
Undivided profits	2,030	789	750	490	*
Reserves and retirement account for preferred stock and capital notes and debentures	680	301	314	62	3
Total capital accounts	11,177	4,874	4,566	1,714	23
Total liabilities and capital accounts	172,702	85,993	68,411	18,021	276

Source: Report of the Comptroller of the Currency.

* Less than $500,000.

[1] Includes territories and insular possessions. All items are shown at book value.

[2] Excludes assets and liabilities of trust departments and of so-called private banks not reporting to state bank supervisors.

[3] Includes trust companies and stock savings banks.

[4] Excludes reciprocal interbank demand balances with banks in the United States.

men have requested even more far-reaching powers that would effectively freeze the public debt into the banking structure under virtually a "one hundred per cent reserve," as that plan was outlined more than a decade ago. President Frank C. Rathje of the American Bankers Association took a strong position against these requests for new powers in his annual report to that Association.

AMERICAN BANKERS ASSOCIATION

The American Bankers Association carried on a vigorous campaign against continued government guarantees and controls. The blanket participation agreement under which the Reconstruction Finance Corporation automatically guarantees loans was criticized severely.

Resolutions passed at the annual convention urged bankers everywhere to continue unremittingly their efforts to sell United States savings bonds. Other resolutions urged a balanced budget, reduced government spending, a system of taxation to encourage individual initiative and private enterprise, and encourage employment. Nationalization of business and industry was opposed. Bankers were urged to keep veterans fully informed of business conditions as they are currently developed.

Officers of the American Bankers Association elected to serve during 1946-47 are: President—C. W. Bailey, president, First National Bank, Clarksville, Tenn.; Vice President—Joseph M. Dodge, president, The Detroit Bank, Detroit 31, Mich.; Treasurer—S. Albert Phillips, vice president, First National Bank, Louisville 1, Ky.; Executive Manager—Harold Stonier, 12 East 36th Street, New York 16.

TRUST BUSINESS

By Gilbert T. Stephenson
Graduate School of Banking, American Bankers Association

TRUST DIVISION, AMERICAN BANKERS ASSOCIATION

The 1946-1947 organization of the Trust Division of the American Bankers Association is as follows: President, Evans Woollen Jr., president, Fletcher Trust Co., Indianapolis, Ind.; Vice President, R. M. Alton, vice president in charge of trust department, United States National Bank, Portland, Ore.; Chairman of the Executive Committee, H. M. Bardt, vice president and trust officer, Bank of America N. T. & S. A., Los Angeles, Calif.; Secretary, Merle E. Selecman, deputy manager, American Bankers Association; Members of the Executive Committee: Henry A. Theis, vice president, Guaranty Trust Co. of New York; James W. Allison, vice president, Equitable Trust Co., Wilmington, Del.; George C. Barclay, vice president, City Bank Farmers Trust Co., New York; J. M. Hutchinson, vice president and trust officer, Davenport Bank and Trust Co., Davenport, Ia.; Lee P. Miller, vice president, Citizens Fidelity Bank and Trust Co., Louisville, Ky.; John A. Reid, vice president, the First National Bank of Cincinnati; John H. Evans, vice president and trust officer, McDowell National Bank, Sharon, Pa.; N. Baxter Maddox, vice president and trust officer, The First National Bank, Atlanta, Ga.; John W. Remington, vice president and trust officer, Lincoln Rochester Trust Co., Rochester, N. Y.; Leo A. Steinhardt, president, International Trust Co., Denver, Col.; B. Magruder Wingfield, vice president and trust officer, The National Bank of Commerce, Houston, Tex.; Clarence R. Chaney, vice-chairman of the board, Northwestern National Bank, Minneapolis, Minn.; Edwin W. Marvin, vice president, The Hartford-Connecticut Trust Co., Hartford, Conn.; L. L. McArthur Jr., vice president, The Northern Trust Co., Chicago; James M. Trenary, vice president and secretary, United States Trust Co. of New York; Raymond H. Trott, vice president, Rhode Island Hospital Trust Co., Providence, R. I.

TRUST CONFERENCES

During 1946 one nationwide and three regional trust conferences were conducted. The annual Mid-Winter Trust Conference was held in New York, Feb. 4-6, 1946; the Pacific Coast and Rocky Mountain States Regional Trust Conference, in Los Angeles, Aug. 7-9, 1946; and the Mid-Continent Trust Conference, in Chicago, Nov. 7-8, 1946. These conferences were sponsored by the Trust Division of the American Bankers Association. The Corporate Fiduciaries Association of Boston sponsored the Thirteenth New England Trust Conference, held in that city Dec. 6, 1946. In addition to these nationwide and regional conferences, the Trust Research Department of The Graduate School of Banking sponsored and conducted a series of 50 local conferences in Illinois, Indiana, Iowa, Maine, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin. These conferences were designed especially for smaller trust departments, completing a series of 67 conferences, 17 of which had been conducted in other states during 1945.

TRUST LEGISLATION

Since only a few state legislatures were in session during 1946, there is comparatively little trust legislation to report. About the only statute of general interest is the Uniform Stock Transfer Act which was adopted by Mississippi. Other statutes of more or less local interest were adopted in Georgia, Kentucky, Mississippi, Missouri, New Jersey, New York, South Carolina, and Virginia.

In the field of trust legislation the most remarkable development has been the amount of more or less uniform trust legislation which was adopted even during the stress and strain of the war years. The following table shows the number of such statutes adopted before 1938 and the number adopted since 1938.

Legislation	Before 1938	Since 1938
Prudent Man Rule for Trust Investment	7	8
Common Trust Fund Acts	6	20
Uniform Trustees' Accounting Act	1	3
Uniform Fiduciaries Act, or Sec. 3	13	12
Nominee-Registration Acts	4	17
Uniform Principal and Income Act	1	13
Uniform Trusts Act	0	6
	32	79

SMALL ESTATES AND SMALL TRUSTS

In the section on Trust Business in THE AMERICAN YEAR BOOK, 1945 (p. 439) mention was made of the unusual number of small estates going through probate and of the attitude of trust institutions toward the acceptance of small estates.

During the year a committee of the Section of Real Property, Probate, and Trust Law of the American Bar Association drafted and published a Model Probate Code, eight sections of which are designed to streamline the settlement of small estates, suggesting one procedure for the settlement of estates under $1,000 and another, somewhat more formal but still simple, procedure for the settlement of estates under $2,500.

A survey as of November 1946 of over 200 trust institutions—small, medium, and large—representing every section of the country reveals that 37 per cent of these institutions set no limit upon the size of the estate they will accept, depending on the circumstances. In addition to these, 21 per cent state they will accept estates as small as $1,000. Out of this group of trust institutions over half state that they actually are seeking or desiring estates of $10,000 and under. As regards trusts, three-fourths of them accept trusts of $10,000 or under and about one-fourth are seeking trusts of $10,000 or under. Of this group of trust institutions, one-fourth are advertising for small estates and small trusts, 10 of which indicate by the advertisements that they accept estates of $1,000 and under. All of which goes to show that trust institutions now are accepting and even seeking small estates and small trusts just as banks are seeking and making small personal loans. The trends toward the acceptance of small estates and small trusts and toward the seeking and making of small loans are of a piece in that they indicate the further democratization of both banking and trust business.

TRUST COMPENSATION

One of the most notable developments in the trust field during 1946 was the progress toward putting trust service on a pay-as-you-go basis. Distinct impetus to this movement was, no doubt, given by the placing of Federal income taxes on a pay-as-you-go basis. Be that as it may, trust institutions in different parts of the country are engaged now in putting their trusts under will and living trusts and, with the approval of the court, guardianships on a pay-as-you-go basis even if their estates always have been on that basis. They are accomplishing this by fixing annual rates in the light of the cost of the service and of the responsibility assumed; by eliminating or greatly reducing the opening and closing charges; by making the principal bear a substantial part of the annual charges of administering the account; and by having the boards of directors of the respective institutions adopt schedules of rates for usual services and make provision for additional compensation for extraordinary service. The following schedule of rates for living trusts recently adopted by one of the larger trust institutions is perhaps typical:

Schedule A. Annual Income Commission

Amount of Income	Annual Commission
$ 0–$ 5,000	5% on income
5,000– 12,500	$ 50.00 plus 4% on income
12,500– 25,000	175.00 plus 3% on income
25,000– 50,000	300.00 plus 2½% on income
50,000 up	550.00 plus 2% on income

Schedule B. Annual Principal Commission

Fair Value of Principal	Annual Commission
$ 0–$ 25,000	4/10% on principal
25,000– 50,000	$ 25.00 plus 3/10% on principal
50,000– 100,000	75.00 plus 2/10% on principal
100,000– 200,000	175.00 plus 1/10% on principal
200,000 up	275.00 plus 1/20% on principal

Combined minimum annual charge, $25

Additional annual charges on mortgages and real estate are specified. Examples of unusual or extraordinary services include: managing or liquidating closely held businesses or tracts or parcels of real estate; handling contested or litigated matters; making special apportionments between principal and income; remitting on other than regularly scheduled dates; preparing on special request lists of investments showing market value and estimated annual income; performing especially difficult or responsible tax services; making distributions to unnamed distributees, such as next of kin.

FOREIGN EXCHANGE

By Marcus Nadler
Graduate School of Business Administration, New York University

---

QUESTIONS OF CURRENCY REVALUATION

The year 1946 was one of transition in the foreign exchange market. It was marked by the establishment of the Bretton Woods financial institutions, the devaluation of the French franc, the upward revaluation of the Canadian dollar and the Swedish krona, intensified inflation in a number of countries and otherwise by relative stability of the official exchanges.

It is generally known that a number of currencies are over-valued. Nevertheless, practically all countries belonging to the International Monetary Fund have notified the latter that the parity of their exchanges will be the same as it was throughout the greater part of 1946. This policy can easily be explained. So long as most countries are primarily in need of imports and have relatively few commodities at their disposal for export, it is to their advantage to maintain their currencies at a rate whereby the internal purchasing power is lower than the external purchasing power. Furthermore, many nations fear that to devalue their currency at the present time, when the supply of commodities available for consumption is still limited, would merely accentuate the process of inflation without bringing any satisfactory results. The various governments have, therefore, postponed the definite stabilization of their currencies until the dangers of inflation have diminished, the supply of commodities has increased and the sellers' markets are being converted into buyers' markets. By that time exports will be of much greater importance, and a downward revaluation of the currency will not exercise the same adverse influence as would be the case at the present time.

EFFECT OF U. S. PRICES ON FOREIGN CURRENCY PROBLEMS

The currency policies of a number of countries also were determined to a large extent by the movement of prices in the United States. This country exercises a great influence on the economies of the world and any important change in prices of commodities here is bound to have a considerable effect on the exchanges of other countries. This was demonstrated quite clearly during the summer of 1946 when Canada and Sweden both appreciated their currencies. The official rate of the Canadian dollar was returned to par and that of the Swedish krona was increased by a little over 14 per cent. The action of both countries was motivated by the fear that prices of commodities in the United States would increase very sharply after decontrol. In order to protect their own price level from the increases they expected in the United States they raised the international value of their own exchanges in terms of the dollar, thereby reducing in terms of their own money the cost of commodities imported from the United States.

Shortly after the repeal of price controls, prices in the United States did rise materially. However, toward the end of the year, a declining tendency became evident in many lines and the opinion was often expressed that commodity prices in the United States had already reached their peak or will in the very near future and that thereafter they will decline. Should commodity prices in the United States decline materially during 1947, that fact is bound to have an effect on the exchange rates of most currencies. In that case a general devaluation of a number of currencies may be expected. If, on the other hand, a spiral between wages and prices should develop in this country and commodity prices should continue to rise, it is fairly certain that a number of other countries will follow the example of Sweden and Canada, *i. e.,* they will raise the value of their currencies in terms of the dollar in order to prevent commodity prices in their countries from following the trend in the United States. The uncertain price outlook in the United States was, therefore, another determining factor in the policies of a number of governments to maintain the present rates of exchange of their currencies.

THE PROCESS OF INFLATION

Official rates of exchange do not actually indicate their true value. This is better expressed in the black markets where prices of commodities are much higher than those officially controlled and where the quotation of the United States dollar is substantially higher than the quoted official rate. In a number of countries throughout the world, black markets in the American dollar exist. The price of the dollar is three or four times higher than the official rate. In part this high quotation for the American currency is attributable to the desire of a number of individuals to protect themselves against the ravages of inflation and the certainty of future devaluation. In part, it reflects the shortage of commodities. To some extent, it also reflects the highly uncertain political conditions which prevail in many parts of the world.

The principal reason for the constant increase of the dollar in the black markets, however, and the constant rise in prices of commodities in these markets, is the inability of some governments to balance their budgets. So long as governments continue to create purchasing power in the form of currency or of deposits in order to meet their budget deficits, there can be no return to confidence. Once the government takes definite measures to wipe out its deficit and to suppress its black markets, however, its currency witnesses a considerable improvement. This, for example, was the case during 1946 in Czechoslovakia, Holland, and Belgium, as well as Hungary, and because of the various and drastic measures taken by the respective governments, confidence in the currency has been restored and black markets in dollar exchange have practically disappeared. On the other hand, in countries where no such measures were taken and where the supply of purchasing power continue to increase, the black markets flourish and the dollar continues to mount. This applies, for example, to France, Italy, China, and several other countries.

One of the problems that confronts the world at large is the restoration of sound currency conditions in the principal defeated enemy countries. notably Germany and Japan. The German mark, for all practical purposes, is used only to buy rationed commodities and for the payment of salaries and wages. Most other transactions are carried out on a barter basis, with the American cigarette the general standard of value. Conditions are confused because of the lack of a central government and because the assets of the banks still consist to a very large extent of government obligations on which no interest is being paid. While conditions in Japan are better, inflation is still rampant, and the purchasing power of the yen is rapidly decreasing.

THE BRETTON WOODS INSTITUTIONS

Although the organizations and the assembly of a competent staff of the International Bank for Reconstruction and Development as well as that of the International Monetary Fund were completed during 1946, they have not started operation. So far as the Bank is concerned there are reasons to believe that loans will be made during the first half of 1947 The Bank must of necessity adopt a very cautious policy in the extension of loans and will first have to establish a market for its securities in the leading countries of the world, notably the United States. It is fairly certain, however, that if the obligations, direct or guaranteed, of the International Bank are properly priced and have not too long a maturity, a ready market for them will be found in the United States. The activities of the International Monetary Fund will not be as complex as was originally thought, primarily because the supply of dollars throughout the world has increased materially owing to a large extent to loans granted by the United States Government directly or indirectly through the Export-Import Bank. The greatest difficulty will arise with those countries, particularly in eastern Europe and in the Far East, which have not received any loans from the United States and where the demand for dollars as well as other rare foreign exchanges will be substantial. Notwithstanding these difficulties, however, the International Monetary Fund will play an important role in the gradual stabilization of currencies and in the elimination of foreign exchange restrictions.

EASING OF FOREIGN EXCHANGE RESTRICTIONS

Foreign exchange restrictions were in force in many countries throughout 1946. Toward the end of the year, however, cumulative evidence appeared of a general desire throughout the world to reduce these restrictions as far as possible in order to restore a freer international flow of credit and commodities. In the United States the release of frozen assets proceeded at a very rapid rate. In the last agreement concluded between the United States and Great Britain it was stipulated that the British Government agree to free all international transactions arising out of current transactions and some steps have already been taken by the Bank of England to loosen the firm grip on the sterling area. It is quite certain, however, that considerable time will have to elapse before the international financial position of the countries is on a sounder basis than at present and before exchange transactions again become free, even if one excludes capital transactions.

THE MOVEMENT OF GOLD

The movement of gold was not so pronounced during the past year, although the United States on balance accumulated gold. In part this was owing to the large volume of loans made by the United States Government to a number of countries, which furnished them with the necessary dollar exchange. In part it was owing to the fact that the volume of international trade is still restricted primarily because of shortages of commodities which prevail all over the world. It is expected, however, the flow of gold to the United States during 1947, particularly from gold-producing countries, will increase.

THE OUTLOOK

If 1946 was a year of transition, 1947 will be a year of decision in the foreign exchange markets. In all probability a number of currencies will be revalued during the year and placed on a more permanent basis. It is fairly certain, however, that in the future the external stability of an exchange will not play the same role as in the past and that considerable fluctuations may be expected in the future. As is well known, members of the International Monetary Fund may change the value of their currencies by 10 per cent without the consent of the Board of Directors of the Monetary Fund. Any further changes need approval of the Fund. There is no question that the approval will be granted wherever necessary since it is quite evident that the international balance of payments of many countries is out of gear and that the currencies of many countries are highly over-valued.

The principal question that arises in this connection is what the future of the pound sterling will be, because it is still the key currency for a number of countries. The attitude of the British monetary authorities will depend to a large extent upon the movement of commodity prices in the United States and on the competitive position of Great Britain.

During the year 1947 the Bretton Woods institutions will definitely begin to operate. It will, therefore, become clear under what conditions the International Bank is willing to extend loans and to what extent the operations of the International Monetary Fund will facilitate currency stability and lead to a gradual removal of foreign exchange restrictions. While exchange restrictions will be removed in some countries, particularly on current transactions, yet there are no reasons to believe that the exchange markets will become free.

Finally, the international exchange markets will to a large extent depend upon the international political situation. If the various difficulties that have arisen among the major powers of the world are ironed out and if a sound treaty of peace is concluded with Germany, the danger of war will definitely have been eliminated and a process of disarmament will set in. This is bound to have a favorable effect on the budgets of many countries and will undoubtedly be a powerful factor in the fight against the forces of inflation. Stable political conditions will soon lead to revival of the international flow of capital from country to country, and this in itself will have a favorable effect on the international stability of exchange rates.

FOREIGN TRADE

By Grace A. Witherow
International Trade Unit, Department of Commerce

EXPANSION IN TRADE

The value of United States exports showed a negligible decline in 1946 as compared with 1945 but exports increased 19 per cent. If strictly military equipment is excluded from the trade of 1945 and, for purposes of comparison, considered only as non-

TABLE 1

UNITED STATES EXPORTS, IMPORTS, AND BALANCE OF MERCHANDISE TRADE

(millions of dollars)

Yearly Average, Year and Period	Exports*		Cash as Per Cent of Total	General Imports	Excess of Exports (+) or Imports (−)	
	Total	Cash-purchase[1]			Total	Cash
1936–38	2,967	2,967	100.0	2,489	+478	+478
1939–41	4,115	3,853	93.6	2,763	+1,352	+1,090
1942–44	11,767	2,834	24.1	3,349	+8,418	−515
1945	9,803	3,759	38.3	4,136	+5,667	−377
1946	9,742	7,965	81.8	4,935	+4,807	+3,030
Semiannual:						
July–Dec., 1945	3,972	2,120	53.3	2,014	+1,958	+106
Jan–June, 1946	4,770	3,505	73.5	2,286	+2,483	+1,218
July–Dec., 1946	4,972	4,460	89.7	2,649	+2,324	+1,812

* Includes re-exports.

[1] Includes purchases made on "cash" or "credit" terms by government purchasing missions and private traders, and also a small amount of shipments by and for the account of, or consigned to, United States Government agencies and establishments abroad. The latter were valued at $15,000,000 in period July-December 1945 and $164,000,000 in year 1946. Private commercial shipments are not available separately.

military items, exports in 1946 increased 23 per cent while imports advanced by 24 per cent.

Commercial exports and supplies shipped by UNRRA and private relief agencies began to increase during 1945, and these goods showed marked expansion in 1946. The gains in these were large enough almost to counterbalance the entire decline after V-J Day in military and other lend-lease supplies which formed a substantial item of trade in the earlier months of 1945. Total exports, therefore, recorded a value of $9,743,000,000 in 1946, as compared with $9,803,000,000 in 1945, a figure representing the highest annual value recorded in any nonwar year.

Imports also showing a disappearance of war trade which partly counterbalanced the increases shown by many other items in 1946, rose from $4,136,000,000 in 1945 to $4,935,000,000. This was the highest annual dollar amount shown for imports in any year except 1920, when the value of incoming goods rose to $5,278,000,000.

Trade with practically all leading countries showed increases in 1946, although the resumption of trade with Europe and the Far East and further expansion in American trade largely accounted for the advance in both exports and imports.

PRICE AND QUANTITY

Prices of commodities in both export and import trade showed a considerable advance in 1946. The unit value of non-lend-lease exports alone, which showed less rise in price during the period of the war than did leading commodities in the lend-lease trade, rose by 10 per cent over 1945 level. As commodity composition shifted in the final quarter of 1945 from a predominance of lend-lease goods to articles of cash-trade, the unit value of total exports dropped to approximately the level of cash trade. Because of the shift in composition the unit value of total exports, therefore, showed a decrease as compared with 1945, although recording an advance of 59 per cent over 1936-38 level.

Imports showed an increase of 12 per cent in unit value over 1945 and of 73 per cent over 1936-38.

In terms of quantity, total exports for 1946 recorded an increase of 4 per cent over 1945 and 105 per cent over the average level of 1936-38. The 1946 total represented the largest volume recorded for a non-war year; it was also larger than the trade in each of the war years except for the high years of lend-lease shipments in 1943 and 1944.

Imports showed an increase of 6 per cent over the 1945 volume and 13 per cent over the prewar 1936-38 average. The 1946 total represented a larger annual volume than for any year except 1941, and it closely approached the high level of that year when trade included unusually large amounts of crude materials.

TABLE 2

INDEXES OF CHANGES IN QUANTITY, UNIT VALUE, AND VALUE OF UNITED STATES EXPORTS AND IMPORTS

Yearly Average and Year	Quantity	Unit Value	Value
Total exports of United States merchandise:[1]			
1936–38	100	100	100
1939–41	135	102	138
1942–44	269	148	399
1945	197	167	328
1946	205	159[2]	325
Non-lend-lease exports:			
1936–38	100	100	100
1939–41	127	102	129
1942–44	71	135	96
1945	96	144[3]	138
1946	191	159[4]	303
Imports for consumption:			
1936–38	100	100	100
1939–41	104	105	109
1942–44	97	140	136
1945	107	155	166
1946	113	173[2]	196

[1] Includes lend-lease exports from 1941 to 1946 inclusive.

[2] December estimated.

[3] Partly estimated.

[4] Same as for total exports; no separate calculation made.

COMMERCIAL OR CASH-PURCHASE EXPORTS

Commercial, or cash-purchase, exports valued at $7,965,000,000 were a predominant part of total United States exports in 1946. Including purchases made by government purchasing missions and private traders on both "cash" and "credit" terms, they formed 82 per cent of total exports, an increase from 38 per cent in 1945. The cash-purchase trade showed considerable expansion during the year, rising from $3,505,000,000 in the six months January-June to $4,460,000,000 in the period from July-December. This gain was made possible in part by the extension of credit to countries having inadequate financial resources for the purchase of goods.

UNRRA SHIPMENTS

The United Nations Relief and Rehabilitation Administration exported $1,015,000,000 worth of merchandise in 1946, comprising 10 per cent of total United States exports. This compares with a total of $355,000,000 in 1945. The agency began operations in March 1944 and made substantial shipments of United States products to foreign countries beginning in the second quarter of 1945. From the first appearance of UNRRA shipments in trade statistics in September 1944 through December 1946, they totaled a sum of $1,368,000,000. Fifty-eight per cent of such supplies went to central and eastern Europe, 12 per cent to the USSR, and 11 per cent to China. Foodstuffs formed 64 per cent of total UNRRA shipments of United States merchandise during the September 1944-December 1946 period, raw cotton, 8 per cent, textiles and wearing apparel, including shoes, 6 per cent, and other commodities 22 per cent. Tables 3 and 4 present the value of UNRRA shipments in 1945 and 1946 by areas and leading commodities.

PRIVATE RELIEF

Shipments by the Red Cross and other private relief agencies, also included in the trade statistics, amounted to $108,000,000 in 1946 as compared with $126,000,000 in 1945. These trade statistics, however, exclude parcels of relatively small value sent by individuals which showed marked increase in 1946. Non-commercial parcel post shipments to Europe and the Far East increased from $30,000,000 (estimate based on samplings of parcel post records by the Department of Commerce) in 1945 to $125,000,000. Thus, on the assumption that all of these parcels represented relief supplies, the total of "private relief" shipments reached $156,000,000 in 1945 and $233,000,000 in 1946. The aggregate of $389,000,000 for the two years 1945 and 1946 was about 30 per cent as large a value as UNRRA shipments during the same period.

TABLE 3

RELIEF AND REHABILITATION SHIPMENTS BY ECONOMIC CLASS AND LEADING COMMODITY

(Value in millions and tenths of millions of dollars)

Class and Commodity	Year 1945[1]	Year 1946
UNRRA		
Total U. S. merchandise	337.4	951.3
Crude materials, total	46.7	126.1
Cotton, unmanufactured	33.0	66.5
Coal	.2	23.9
Animals, live	1.1	15.5
Wool, unmanufactured	9.3	5.2
Other	4.2	15.0
Foodstuffs, total	201.1	628.5
Meats and edible fats	54.0	220.3
Wheat, including flour	60.2	155.1
Dairy products and eggs	39.1	113.4
Fruits and vegetables	22.9	56.3
Sugar and related products	2.6	21.4
Feed grains[2]	9.4	14.1
Soybean flour	1.7	11.6
Fish and fish products	6.8	9.1
Milled rice	.2	8.8
Fruit juices	2.1	2.9
Other	4.0	15.5
Manufactures including semi-manufactures, total	89.6	196.7
Machinery, total[3]	10.3	39.8
Textile manufactures, including yarns	31.4	32.1
Chemicals and related products	13.5	21.0
Medicinal and pharmaceutical preparations	4.3	7.5
Soap	6.0	5.0
Supplies for relief and charity[4]	9.8	16.8
Rubber manufactures[5]	6.2	12.1
Leather boots and shoes	5.3	11.0
Iron and steel mill products	.7	9.0
Petroleum products	(x)	8.0
Automobiles, parts, and accessories	2.0	5.2
Advanced manufactures of steel	1.1	4.0
Other	11.1	37.7
Re-exports, total	17.9	60.9
Wool, unmanufactured	15.4	48.9
Tea and coffee	.3	8.9
Fish oils, inedible	.6	—
Clothing for relief or charity	.4	—
Other	1.2	3.1
Private Agencies		
For charity, total	125.8	108.1
Clothing	67.1	58.2
Food	40.3	32.6
Surgical, sanitary, and hospital supplies and equipment	4.8	4.8
Drugs and biological supplies	5.3	3.2
Blankets and bedding	1.3	1.6
Other	7.0	7.6

TABLE 3 (Continued)

(x) Less than $50,000.

[1] UNRRA shipments began in September 1944 but totaled only $609,000 through the end of the year.

[2] Includes corn, oats, barley, rye, and grain sorghums.

[3] Mainly agricultural machinery and implements but also includes electrical apparatus, industrial machinery, office appliances and printing machinery.

[4] Largely second-hand clothing.

[5] Mainly canvas shoes with rubber soles.

TABLE 4

UNRRA AND PRIVATE RELIEF SHIPMENTS,[1] BY LEADING COUNTRIES AND AREAS

(In millions of dollars)

	UNRRA[2]		Private Relief	
	1945	1946	1945	1946
Total	355	1,012	126	108
United Kingdom	(x)	(x)	3	(x)
USSR	17	142	34	11
Continental Europe (excluding USSR)	323	726	80	83
Western countries[3]	18	236	70	43
Central and Eastern areas[4]	305	490	10	40
Far East, total	14	143	7	12
China	14	136	1	5

(x) Less than $500,000.

[1] Includes reexports.

[2] UNRRA shipments began in September 1944 but totaled only $609,000 through the end of the year.

[3] Includes Sweden, Norway, Denmark, Netherlands, Belgium, France, Germany, Austria, Switzerland, Spain, Portugal and Italy; UNRRA shipments went mainly to Austria and Italy.

[4] Includes Czechoslovakia, Hungary, Finland, Estonia, Latvia, Lithuania, Poland, Yugoslavia, Albania, Greece, Rumania and Bulgaria.

LEND-LEASE SUPPLIES

Although the lend-lease program officially terminated at the close of the war agreements were reached with many of the recipients of this aid to permit goods already arranged for to move forward on a loan basis. Trade statistics, therefore, class goods valued at $654,000,000 about 7 per cent of total exports, as lend-lease shipments in 1946. Consisting largely of foodstuffs, textile fibers and manufactures, coal and machinery, they went primarily to Continental Europe, the USSR and the United Kingdom, as indicated in Tables 5 and 6.

TABLE 5

LEND-LEASE SHIPMENTS BY ECONOMIC CLASS AND LEADING COMMODITY, 1945 AND 1946

(millions of dollars)

Class and Commodity	1945	1946
Total United States Merchandise	5,543	643
Crude materials	256	71
Foodstuffs	1,000	188
Manufactured articles	4,287	384
Cotton, unmanufactured	155	32
Coal	21	33
Tobacco, unmanufactured	49	(x)
Meats and edible fats	310	92
Dairy products and eggs	343	45
Fruits and vegetables	137	19
Wheat, including flour	113	12
Textiles and manufactures	165	40
Machinery	624	244
Automobiles (mainly motor trucks, parts and accessories)	426	28
Chemicals and related products	102	5
Petroleum products	562	(x)
Iron and steel-mill products	179	15
Military equipment	1,826	5
Total reexports	19	12
Wool, unmanufactured	10	12

(x) Less than $500,000.

TABLE 6

LEND-LEASE SHIPMENTS[1] BY LEADING COUNTRY AND AREA

(millions of dollars)

Country and Area	1945	1946
Total	5,562	654
United Kingdom	1,893	118
USSR	1,783	152
Continental Europe (excluding USSR)	658	305
Africa and Near East	278	24
Far East	842	47
Other countries	108	8

[1] Includes re-exports.

COMPOSITION OF EXPORTS

Manufactured articles other than military equipment formed the largest export group in 1946 as they regularly did during many years before the war. The group as shown in Table 7 advanced from an average of $1,378,000.000 in 1936-38 to $4,341,000,000 (military items omitted) in 1945 and $4,944,000,000 in 1946. This 1946 total was the highest recorded for any year except 1944 when lend-lease shipments of heavy steel, motor trucks, and other items not classed as military but having many wartime uses, were unusually large. The group comprised 52 per cent of total exports as compared with 47 per cent in 1936-38 and 45 per cent in 1945.

Military items disappeared from the trade almost completely in 1946 but they had expanded to a higher value than manufactures of other items in 1943 and 1944. In 1944, the peak year of these shipments, total exports of finished manufactures including military equipment amounted to $11,146,000.000 or 76 per cent of total exports.

Foodstuffs more than any other group except implements of war showed marked expansion during the war years and, in response to "relief" demands, it recorded a further advance in 1946. Exports of foodstuffs valued at $2,172,000,000 in 1946 amounted to approximately seven times pre-war shipments. They formed 23 per cent of total exports in 1946 as compared with 17 per cent in 1945, 12 to 13 per cent in the years 1942 through 1944 and 10 per cent before the war.

Exports of crude materials marked the outstanding increase in 1946 with a gain that raised their value from $875,000,000 in 1945 to $1,415,000,000 and their share from 9 per cent to 15 per cent of total exports. Since this group had shown a sharp decline in

TABLE 7

MERCHANDISE TRADE BY ECONOMIC CLASSES: VALUE AND PERCENTAGE DISTRIBUTION

(millions of dollars)

Yearly Average or Year	Total		Crude Materials		Foodstuffs		Semimanufactures		Finished Manufactures Excluding Military		Military Equipment[1]	
	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent	Value	Per Cent
Exports of United States merchandise:												
1936–38	2,925	100.0	669	22.9	306	10.5	519	17.7	1,378	47.1	53	1.8
1939–41	4,026	100.0	457	11.4	352	8.7	757	18.8	1,946	48.3	515	12.8
1942–44	11,669	100.0	545	4.7	1,473	12.6	1,035	8.9	3,895	33.4	4,721	40.5
1945	9,586	100.0	875	9.1	1,678	17.5	782	8.2	4,341	45.3	1,909	19.9
1946	9,499	100.0	1,415	14.9	2,172	22.9	893	9.4	4,944	52.0	75	.8
Imports for consumption:												
1936–38	2,461	100.0	760	30.9	720	29.2	503	20.4	477	19.4	1	(x)
1939–41	2,680	100.0	1,044	39.0	622	23.2	590	22.0	423	15.8	1	(x)
1942–44	3,346	100.0	1,052	31.4	997	29.8	674	20.1	467	14.0	155	4.6
1945	4,075	100.0	1,164	28.6	1,155	28.3	928	22.8	632	15.5	196	4.8
1946	4,813	100.0	1,725	35.8	1,317	27.4	926	19.2	840	17.5	5	.1

[1] Military equipment includes aircraft, military tanks, explosives, firearms, and other strictly military items through 1945; largely aircraft parts and accessories and firearms and ammunition in 1946.

(x) Less than one-tenth of one per cent.

the early years of the war and had not regained pre-war value until 1945, it represented in 1946 only about two-thirds the proportion it had formed of total exports in 1936-38.

LEADING COMMODITY EXPORTS

Among leading commodity exports shown in Table 9, machinery valued at $1,367,000,000 in 1946 ranked first in importance. Including industrial machinery, electrical apparatus, agricultural implements and office machines, this item formed three-tenths of the exports of finished manufactures in 1946. It showed an increase of 15 per cent as compared with 1945, mainly owing to larger shipments of industrial machinery. Resumption of trade in passenger automobiles which increased to nearly 117,000 cars valued at $122,000,000 in 1946 also accounted in part for the increase in the manufactured group. Textile fabrics and manufactures valued at $732,000,000, and chemicals and related products at $490,000,000 showed further marked increase over the high levels of the preceding war years. Non-ferrous metals and heavy iron and steel dropped slightly lower than in the immediately preceding year, and petroleum products fell off sharply, but each of these still showed a much larger value than before the war.

Among foodstuffs exports, meats and edible fats attained a total of 1,795,687,000 pounds, valued at $434,000,000. They showed an increase of 8 per cent over shipments in 1945 but a 36 per cent smaller quantity than during the peak wartime movement of these products in 1943 and 1944.

Dairy products similarly showed expansion over 1945 shipments and were also larger than in 1943 and 1944. Grain and flour movements which had showed only moderate gain up to 1944 recorded extraordinary expansion in 1945 and again in 1946 with European, Far Eastern and North African countries the main destinations. Relatively large amounts also of sugar went to Europe and North Africa.

Among crude materials, exports of unmanufactured cotton amounting to 1,999,000,000 pounds valued at $535,000,000 were 56 per cent larger in quantity than in 1945, although still 30 per cent smaller than the annual average for 1936-38. Principal destinations for cotton in 1946 included China, France, Italy and Japan; shipments to the United Kingdom which ranked as the second largest market in 1945 showed a decline of 44 per cent. Coal exports, supplied in substantial tonnage to Europe and also in slightly increased amounts to Canada, rose to 42,605,000 tons valued at $302,000,000, a volume greatly in excess of the usual prewar shipments. Coal exports in 1946 were about 3,391,000 tons larger than in 1920, the year of greatest shipments following the First World War. Exports of unmanufactured tobacco, amounting to 663,000,000 pounds valued at $352,000,000, increased by 40 per cent in quantity over 1945 and 48 per cent over the average for 1936-38; they went largely to the United Kingdom, Continental Europe and the Far East.

WORLD DISTRIBUTION—EASTERN HEMISPHERE

The Continent of Europe stood out as the main destination of United States exports in 1946. Including substantial amounts of foodstuffs and other supplies for reconstruction purchased by Western countries as well as large UNRRA shipments to Central and Eastern Europe, total exports to Europe, excluding the USSR, increased from $602,000,000 in 1944 to $1,448,000,000 in 1945 and $2,853,000,000 in 1946. Commercial, or cash-purchase exports, going mainly to the Western European countries, and comprising three-fifths of total exports in 1946, were far larger than the annual average for exports to the Western countries in pre-war years including the large trade with Germany. UNRRA shipments to Central and Eastern Europe, Table 4, far exceeded the small pre-war trade with that part of the Continent.

The European trade included some Lend-Lease merchandise sent mainly to Belgium, Netherlands and France in 1946. These goods formed 11 per cent of exports to Europe for the year, but showing a decline, amounted to less than 1 per cent of total exports in the final quarter.

Exports to the United Kingdom and the USSR, which ranked first and second as destinations in the years of large lend-lease aid, showed marked decline in 1946. Increases in cash-trading were not large enough to counterbalance the decreased shipments of lend-lease goods. Exports to the United Kingdom dropped off by 61 per cent to $855,000,000, and those to the USSR showed a decline of 80 per cent to $358,000,000. Both figures were, however, considerably larger than the annual average value of exports to these countries in 1936-38.

Exports to the Far East, an area consisting of all Southern and Eastern Asia and Oceania, increased by 22 per cent from 1945 to $1,328,000,000 in 1946, a total representing almost two and a half times the 1936-38 value. Commercial shipments formed 85 per cent of the trade and UNRRA shipments, sent mainly to China, were 8 per cent. Lend-lease supplies declined from 78 per cent, which they had formed of shipments to the area in 1945 to 4 per cent of total exports in 1946.

Exports to Africa and the Near East valued at $619,000,000 in 1946, a slightly smaller total than in 1945, included mainly commercial goods. Although this represented a marked reduction from the years when the trade included large amounts of lend-lease supplies, the 1946 total showed an increase of nearly 4 times over the average value in 1936-38.

WORLD DISTRIBUTION—WESTERN HEMISPHERE

Exports to the American Republics which averaged slightly less than half a million dollars in 1936-38 rose to slightly more than $2,000,000,000 in 1946. The American trade showed marked expansion during the period 1939-1941, after European sources of supply were cut off, and although it

TABLE 8

TOTAL EXPORTS, CASH-PURCHASE EXPORTS AND GENERAL IMPORTS BY LEADING COUNTRIES AND AREAS: VALUE AND PERCENTAGE DISTRIBUTION

Country and Area	Millions of Dollars			Percentage Distribution		
	1936–38 Average	1945	1946	1936–38 Average	1945	1946
Exports, Including Lend-Lease and Relief[1]						
Total	2,967	9,803	9,742	100.0	100.0	100.0
Canada	454	1,178	1,442	15.3	12.0	14.8
American Republics	[2]485	1,263	2,100	16.3	12.9	21.6
United Kingdom	499	2,189	855	16.8	22.3	8.8
USSR	49	1,838	358	1.7	18.8	3.7
Continental Europe[3]	678	1,448	2,853	22.9	14.8	29.3
Africa and Near East	160	630	619	5.4	6.4	6.4
Far East	557	1,093	1,328	18.8	11.2	13.6
All other	85	164	187	2.9	1.7	1.9
Cash-Purchase Exports[1]						
Total	2,967	3,759	7,965	100.0	100.0	100.0
Canada	454	1,122	1,439	15.3	29.9	18.1
American Republics	[2]485	1,228	2,095	16.3	32.7	26.3
United Kingdom	499	293	737	16.8	7.8	9.3
USSR	49	4	53	1.7	.1	.7
Continental Europe[3]	678	386	1,736	22.9	10.3	21.8
Africa and Near East	160	351	593	5.4	9.3	7.4
Far East	557	230	1,126	18.8	6.1	14.1
All other	85	146	185	2.9	3.8	2.3
General Imports						
Total	2,489	4,136	4,935	100.0	100.0	100.0
Canada	345	1,128	883	13.9	27.3	17.8
American Republics	[2]542	1,623	1,760	21.8	39.2	35.7
United Kingdom	174	88	156	7.0	2.1	3.2
USSR	25	54	100	1.0	1.3	2.0
Continental Europe[3]	507	253	535	20.4	6.1	10.8
Africa and Near East	97	448	490	3.9	10.8	9.9
Far East	758	424	906	30.5	10.3	18.4
All other	41	118	105	1.6	2.9	2.1

[1] Includes reexports.
[2] Includes Canal Zone in 1936 and 1937.
[3] Continental Europe excluding USSR.

dropped somewhat in 1942 as a reflection of controls placed over United States export supplies and shortages in shipping facilities, it continued to advance each year thereafter. It rose from $1,263,000,000 in 1945 to $2,100,000,000 in 1946 partly because of the return to the trade of passenger automobiles, rubber tires, electric refrigerators and other exports which had largely disappeared during the war years. Moreover, exports of heavy steel, industrial machinery, motor trucks, textiles and chemical products, which the United States had supplied in relatively large volume during the war showed further marked gains.

Exports to Canada valued at $1,442,000,000 increased by 22 per cent over 1945 and 220 per cent over the 1936-38 annual average. Trade in a wide range of commodities expanded in 1946, raising the total to almost the same high level as in 1943 and 1944 before the termination of the large trade in essential war supplies. Manufactured articles, including passenger automobiles, motor trucks, agricultural implements, and such scarce wartime items as electrical appliances and toys showed marked gains. Coal and petroleum products also showed increases. In 1946, as usual, Canada ranked first among individual countries as an export market for United States products.

IMPORT TRENDS

The import trade showed greater expansion in crude materials in 1946 than in any other group. Including substantial amounts of Far Eastern rubber and silk, the group rose from an average value of $1.052,000 000 in 1942-44 and $1,164.000,000 in 1945 to $1,725.000,000 in 1946. It advanced from 31 per cent in the prewar 1936-38 trade to 36 per cent of total imports in 1946, although this proportion was somewhat smaller than in 1940, 1941 and 1942 the years in which the United States accumulated large stocks of strategic materials.

Imports of foodstuffs valued at $1,317,000.000 in 1946 advanced by 14 per cent over the preceding year to nearly as large a value as in 1944. Grain and alcoholic spirits imported in unusually large volume in that earlier year declined sharply in 1945 and showed further reduction in 1946. The increase in 1946 was largely due to trade resuming with Europe and larger imports of coffee from the American Republics at higher prices.

Imports of finished manufactures also reflected the resumption of trade with areas which were inaccessible during the war. This group rose to a value of $845,000,000 or double the value shown in the earlier years of the war. The resuming trade in textiles, jewelry and glassware from several countries on the Continent of Europe, expansion in worsteds and pottery from the United Kingdom, and a slight increase in imports of watches from Switzerland accounted mainly for the advance in the group during 1946.

Imports of semimanufactures remained at the 1945 level and totaled $926,000.000 in 1946. This group had shown marked expansion during the war years primarily as a reflection of the large imports of metals, which dropped in 1946 to half the value recorded in 1945. Imports of paper materials, lumber, and vegetable oils showed moderate increases and those of cut diamonds doubled to counterbalance the marked drop in metals.

LEADING IMPORT COMMODITIES

Table 10 shows the value of leading commodities in each economic class of imports in 1936-38, 1945 and 1946. Among crude materials, raw silk imported in only small amounts from early 1942 through 1945 rose to 13,000 000 pounds in 1946, or 23 per cent of the average imports in 1936-38. Imports of crude rubber amounting to 840,000,000 pounds, an increase of 170 per cent over 1945, represented three-fourths of the pre-war 1936-38 average quantity. Imports of unmanufactured wool which showed marked expansion during the early years of the war reached 1,062,000,000 pounds in 1946, nearly five times the 1936-38 average imports. Advances in price contributed to the rise in value of these commodities, particularly for silk and rubber.

Coffee, the leading foodstuff imported, totaled 2.871.000,000 pounds, an increase of 6 per cent over 1945 and 59 per cent over the pre-war average. The rise in price from an average unit value of 7 cents in 1936-38 to 13 cents in 1945 and 16 cents in 1946, contributed greatly to the advance in the value of coffee. Imports of sugar, amounting to 5,252.000,000 pounds, were 80 per cent of the quantity in 1945 and 86 per cent of the pre-war volume. Prices showed moderate advances, thus accounting for the rise in value of sugar.

Among semimanufactured imports, metals stand out as leading commodity. Imports of copper and aluminum supplied by Western Hemisphere countries which showed marked expansion during the war years, dropped off very substantially in 1946. Copper imports, amounting to $78,000.000, were less than half as large as in 1945. On the other hand, imports of tin bars, which were relatively small from 1942 through 1945 showed a marked in-

TABLE 9

UNITED STATES EXPORTS* OF LEADING COMMODITIES: TOTAL AND CASH-PURCHASE

(Value in millions of dollars. In addition to cash-purchase goods, totals include lend-lease and UNRRA shipments in 1945 and 1946.)

Commodity	Unit of Quantity	Quantity			Value		
		1936–38 Average	1945	1946	1936–38 Average	1945	1946
Crude materials:							
Cotton, unmanufactured, total	1,000 lb.	2,879,780	1,282,049	1,999,084	319	279	536
Cash-purchase	do		447,841	1,587,684		92	438
Tobacco, unmanufactured, total	do	449,719	472,640	663,301	143	239	352
Cash-purchase	do		382,104	663,297		190	352
Coal, total	1,000 l. tons	12,356	28,244	42,605	56	184	302
Cash-purchase	do		24,496	33,022		163	245
Crude petroleum, total	1,000 bbl.	64,898	35,353	42,574	91	58	74
Cash-purchase	do		34,245	41,397		56	72
Foodstuffs:							
Meats and edible fats, total	1,000 lb.	290,472	1,660,053	1,795,687	43	390	434
Cash-purchase	do		146,188	534,823		25	122
Dairy products and eggs, total	—	—	—	—	6	425	449
Cash-purchase	—	—	—	—		43	291
Fruits and vegetables, total	—	—	—	—	98	274	297
Cash-purchase	—	—	—	—		114	222
Wheat, including flour, total	1,000 bu.	62,088	187,607	306,341	62	329	610
Cash-purchase	do		92,413	219,594		156	443
Feed grains, total[1]	1,000 bu.	70,995	32,028	48,099	44	46	67
Cash-purchase	do		10,154	36,848		16	52
Sugar and related products, total	—	—	—	—	7	35	58
Cash-purchase	—	—	—	—		12	37
Manufactures:[2]							
Machinery, total[3]	—	—	—	—	434	1,193	1,367
Cash-purchase	—	—	—	—		557	1,083
Automobiles, including parts and accessories, total	—	—	—	—	286	580	528
Cash-purchase	—	—	—	—		152	495
Other vehicles, except military, total[4]	—	—	—	—	20	109	257
Cash-purchase	—	—	—	—		57	251
Iron and steel-mill products, total	—	—	—	—	199	458	447
Cash-purchase	—	—	—	—		278	423

TABLE 9 (Continued)

Commodity	Unit of Quantity	Quantity			Value		
		1936–38 Average	1945	1946	1936–38 Average	1945	1946
Manufactures (Continued):							
Advanced manufactures of steel, total	—	—	—	—	44	115	156
Cash-purchase	—	—	—	—		85	149
Chemicals and related products, total	—	—	—	—	117	394	490
Cash-purchase	—	—	—	—		278	464
Petroleum products, total	—	—	—	—	253	693	361
Cash-purchase	—	—	—	—		130	353
Textiles and manufactures, total[5]	—	—	—	—	87	477	735
Cash-purchase	—	—	—	—		280	663
Rubber manufactures, including synthetic rubbers	—	—	—	—	25	152	176
Cash-purchase	—	—	—	—		57	153
Paper, paper manufactures, and wood pulp, total	—	—	—	—	40	101	111
Cash-purchase	—	—	—	—		62	107
Nonferrous metals and manufactures, total[6]	—	—	—	—	103	105	105
Cash-purchase	—	—	—	—		51	98
Commodities exported for relief or charity, total	—	—	—	—	n.s.s.	139	127
Cash-purchase	—	—	—	—		126	108
Military exports, total	—	—	—	—	54	1,909	77[7]
Cash-purchase	—	—	—	—		83	72

---

* Exports of United States merchandise.

[1] Includes corn, oats, barley, rye and grain sorghums.

[2] Including semimanufactures.

[3] Includes electrical apparatus, industrial machinery, office appliances, printing machinery, and agricultural machinery and implements.

[4] Includes value of civilian aircraft as follows: 1945, $9,200,000; 1946, $64,000,000.

[5] Includes finished products, and yarns and other semimanufactures.

[6] Nonferrous, except precious metals and manufactures.

[7] Includes aircraft parts and accessories valued at $50,000,000; watercraft except naval valued at $3,600,000; ordnance combat vehicles valued at $2,900,000; explosives valued at $4,700,000; miscellaneous military equipment valued at $800,000; firearms, ammunition and pyrotechnics valued at $11,600,000.

n.s.s. Not shown separately.

TABLE 10

UNITED STATES IMPORTS FOR CONSUMPTION OF LEADING COMMODITIES

(Value in millions of dollars)

Commodity	Unit of Quantity	Quantity			Value		
		1936–38 Average	1945	1946	1936–38 Average	1945	1946
Crude materials:							
Wool, unmanufactured	thous. lb. (act. wt.)	229,345	819,867	1,062,021	57	241	290
Nonferrous ores and concentrates[1]	—	—	—	—	32	132	113
Undressed furs	—	—	—	—	65	140	232
Crude rubber	thous. lb.	1,116,000	311,900	839,633	179	99	228
Tobacco, unmanufactured	do	70,209	75,958	82,030	33	75	86
Crude petroleum	thous. bbl.	28,772	74,127	89,311	21	81	102
Hides and skins	thous. lb.	268,170	195,128	223,494	52	49	78
Raw silk	do	57,791	107	13,361	99	1	128
Oilseeds	do	1,907,000	932,414	1,265,642	45	35	53
Pulpwoods	thous. cord	1,342	1,563	1,728	11	21	25
Diamonds, rough or uncut and industrial	thous. carat	1,579	11,686	5,739	12	56	63
Foodstuffs:							
Coffee	mil. lb.	1,808	2,717	2,871	141	346	472
Cane sugar	do	6,092	6,574	5,252	152	202	196
Fruits, nuts and vegetables	—	—	—	—	81	152	195
Grain[2]	thous. bu.	71,895	92,979	15,213	54	77	23
Fish including shellfish	thous. lb.	346,166	404,520	471,352	31	76	89
Alcoholic spirits and wines	—	—	—	—	69	61	85
Meats, fats and dairy products	—	—	—	—	47	33	28
Cocoa	thous. lb.	568,011	621,325	594,746	35	46	57
Molasses, including inedible	thous. gal.	251,107	139,392	93,272	14	21	13
Tea	thous. lb.	86,222	83,815	94,151	19	29	34
Spices	do	117,000	59,474	83,124	12	20	28
Semi-manufactures:							
Nonferrous metals[3]	—	—	—	—	146	409	207
Copper	—	—	—	—	35	182	78
Tin (bars, blocks and pigs)	thous. lb.	159,693	18,906	34,765	75	9	19
Aluminum metal, plates and bars	do	29,494	678,586	113,900	5	98	12
Lead	—	—	—	—	(x)	26	14
Nickel and alloys	—	—	—	—	18	43	39

TABLE 10 (Continued)

Commodity	Unit of Quantity	Quantity			Value		
		1936–38 Average	1945	1946	1936–38 Average	1945	1946
Semi-manufactures (Continued):							
Wood pulp	thous. s. ton	2,128	1,752	1,795	85	116	135
Gas and fuel oil	thous. bbl.	28,649	53,906	54,672	19	55	54
Sawed lumber[4]	mil. bd. ft.	588	993	1,139	15	52	70
Vegetable oils and fats expressed	thous. lb.	1,036,306	227,856	214,457	57	20	39
Leather	—	—	—	—	10	23	37
Diamonds, cut but unset	thous. carat	432	377	604	23	64	118
Ethyl alcohol	thous. gal.	(x)	34,580	25,579	(x)	19	18
Sodium nitrate	thous. s. ton	626	850	530	11	19	11
Finished manufactures:							
Paper and manufactures	mil. lb.[8]	5,562	5,338	6,984	120	158	254
Clocks and watches[5]	—	—	—	—	9	60	65
Burlaps	thous. lb.	573,121	459,205	555,895	35	65	77
Cotton manufactures	—	—	—	—	42	34	35
Wool manufactures	—	—	—	—	20	19	32
Flax, hemp, and ramie manufactures	—	—	—	—	27	8	30
Leather manufactures	—	—	—	—	9	18	33
Machinery[6]	—	—	—	—	18	28	32
Menthol	thous. lb.	402	671	559	1	5	3
Jewelry and parts	—	—	—	—	(x)	4	2
Metal articles and materials for personal use and adornment	—	—	—	—	(x)	2	1
Rosaries, chaplets and similar articles	—	—	—	—	(x)	(x)	(x)
Military imports[7]	—	—	—	—	1	196	5

(x) Less than $500,000.

[1] Including those used in the manufacture of iron and steel.

[2] Includes wheat, corn, oats, rye, and barley.

[3] Including those used in the manufacture of iron and steel; also a small value of finished products.

[4] Excluding cabinet woods.

[5] Including clockwork mechanisms and parts.

[6] Includes electrical, industrial and agricultural machinery.

[7] Includes aircraft, explosives, firearms, and miscellaneous military equipment and supplies.

[8] Quantity shown represents newsprint.

crease in 1946, as Far Eastern areas again began to make supplies available.

Linens, worsteds, articles of leather and other European manufactures not obtainable during the war showed, relatively, the largest increases among manufactured articles in 1946. The value of these items ranging from $30,000,000 to $33,000,000 remained much smaller, however, than paper and burlaps, the leading United States imports of manufactured articles. These two commodities increased by 61 per cent to $254,000,000 and 18 per cent to $77,000,000, respectively, in 1946 or to more than double pre-war values. Clocks and watches, which expanded greatly in the immediately preceding years, showed a slight increase over 1945, to $65,000,000.

SOURCES OF IMPORTS—EASTERN HEMISPHERE

Arrivals from the liberated areas in 1946 supplemented the considerable volume of goods continuing to arrive from India, Australia, and other wartime accessible areas of the Far East. Trade from British Malaya, Japan, the Republic of the Philippines, and China increased very substantially in 1946, thus raising total imports from the Far East to $906,000,000 or 114 per cent higher than in 1945. Advancing from 9 per cent in 1944 to 18 per cent, they formed about three-fifths as large a proportion of United States imports as in 1936-38. Imports of tin and many other commodities from the Far East in 1946 still remained below prewar levels and the large amounts of sugar formerly supplied by the Philippines continued to be missing from the trade.

Imports showing advances from wartime inaccessible European countries also included commodities important in pre-war trade, namely, cut diamonds and textile manufactures from Belgium, brandies, liqueurs, textile manufactures and perfumery from France, raw silk, edible nuts and wines from Italy, bulbs and seeds from the Netherlands, precious stones and jewelry from Czechoslovakia, and steel from Sweden. Increasing to $535,000,000 total imports from the Continent of Europe, excluding the USSR, formed 11 per cent of total United States imports in 1946, or slightly more than half the pre-war share. Only 2 to 4 per cent of United States imports came from that area during the years from 1941 through 1944.

Imports from the American Republics, which area became the chief source of foreign merchandise in 1942 and showed steady growth each year thereafter, rose to $1,760,000,000 in 1946. These goods formed 36 per cent of the United States imports in 1946 as compared with approximately 40 per cent in the three years immediately preceding and 22 per cent before the war.

Canada was the only leading country from which imports decreased in 1946. Primarily because of the termination of war trade and the decline in imports of aluminum, both of which were relatively large in 1945, the total trade from Canada showed a decrease from $1,128,000,000 in 1945 to $883,000,000 in 1946. Imports of some commodities from Canada including the large trade in lumber, pulp and paper showed increases in 1946, but the gain for these was not large enough to counterbalance the decline in metals and military items.

BALANCE OF MERCHANDISE TRADE

The large excess of merchandise exports over merchandise imports in United States trade in 1946 developed as a result of the greater availability of supplies in this country than in most other areas of the world. While the United States furnished large quantities of foodstuffs and other goods for reconstruction in war devastated areas, and also manufactured articles to meet the demands which were largely unmet during the war years, many other areas were not in a position fully to meet United States requirements for numerous commodities. The large excess of exports over imports was financed by the extension of credits and by the drawing down of dollar balances.

Exports are expected to increase

somewhat in 1947, and although imports may expand at a more rapid rate as production in other countries accelerates, the export balance will, no doubt, continue to be of considerable magnitude.

FOREIGN TRADE POLICIES*

By HENRY CHALMERS
CONSULTANT ON COMMERCIAL POLICY, DEPARTMENT OF COMMERCE

GENERAL

In so far as trade policies determined the movements of goods between countries during 1946, the official decisions as to how much of particular commodities should be exported and where they should go were, on the whole, more influential than were the customs duties or other official conditions of admission set by the governments of the importing countries. Of greater influence than either export or import controls, however, have been the acute needs of the war-involved areas for the immediate necessities of life and for products essential to the rehabilitation of their economies, and the unprecedented pent-up demand everywhere for goods that had not been freely available for a number of years.

DOMINANT CONTROLS OTHER THAN TRADE POLICIES

Two factors, in the main, limited the huge volume of international trade needed to meet these exceptional demands: the general world shortages of many essential commodities, especially foodstuffs and coal, and often also of the means for transporting them; and the limited ability of many countries to buy such foreign goods as were obtainable. Most of the changes during 1946 in the trade control measures of individual countries, and the many special commercial arrangements worked out between various sets of countries, seemed largely prompted by these limitations inherent in the disordered post-war situation. In the case of particular countries, certain special motives have been figuring prominently in the regulation of their foreign trade, namely: to hold down imports which compete strongly with similar domestic products; to advance the government's control over the country's economic structure and development; to give special attention to the current trade with certain other countries; or, in certain regions, to promote closer long-term economic relations. During 1946, however, these were usually subordinate to the above overriding considerations.

The general improvement during the course of the year in the conditions of world supply of various commodities, along with the progress toward rehabilitation in a number of countries, especially in western Europe, allowed the relaxation during 1946 of some of the trade controls, in operation at its start by various international bodies and individual governments. However, the return of many countries to more normal world trade relations depends in large measure upon the various political settlements yet to be worked out and to be brought into effective operation. Moreover, most of the countries which had been directly involved in the war are still suffering from the general disorganization of their internal economies.

Varying only in degree, the possibility of these countries resuming foreign commerce in anything like the usual volume and manner is still distinctly limited by many factors, in-

---

*See *Foreign Commerce Weekly* of U.S. Department of Commerce for Feb. 8, 1947.

cluding their low level of production itself is partly the result of inadequate supplies of imported raw materials and fuel—disordered domestic commercial channels, and the unstable state of internal prices and currency values. Even many countries that were outside the active war zones are still in the process of adjustment to the shocks to their economies resulting from the conflict, in the way of dislocation of old industries, stimulations to new developments, and changes in their financial position. Under the circumstances, the major conditions which limited the movements of goods between countries during 1946 and chiefly dictated the year's changes in trade control measures, might on the whole be expected to continue well into 1947.

While war-inherited conditions and short-range pressures are thus still dominating the current foreign trade measures of most countries, certain preparatory steps taken during 1946, upon the initiative of the United States, prepared the way for a series of international consultations and negotiations during 1947 which may set the pattern for world trade for the period ahead. The year 1947 should show how far the important trading countries are ready to agree upon a concerted long-term program for liberal foreign trade policies, as relaxation in the pressures of the post-war transition period allows them more freedom of action.

FINANCIAL LIMITATIONS AND FACILITIES

The financial considerations controlling international commerce have been of a highly unusual character. Among the countries of Europe and the Far East that had suffered destruction and impoverishment by the war, inadequacy of export goods or of other means with which to pay for the large volume of immediate import needs, was to be expected. In addition, certain countries possessing foreign exchange resources had them largely in the form of balances in other countries, which were not freely convertible for use in third countries where particular products desired might be more readily available. This has been especially true of most of the British Empire areas and of certain others for which the United Kingdom has been the major market. Moreover, a number of governments of Europe and of Latin America, which had usable financial reserves, felt impelled to be selective in the importations permitted. They have been particularly restricting purchases of various consumers' goods, chiefly to reserve their funds for foreign products considered more essential to the economy of the country.

On the other hand, a major aid to the resumption of purchasing by many countries with inadequate financial resources were the credits extended them for this purpose, mainly by the United States, Canada, Sweden, Switzerland, and to a lesser extent by certain other European countries and by Argentina and Brazil. A substantial part of the imports during the year to the countries of western and northern Europe that had been engaged in the war was made possible by the various forms of credit extended them during 1946 or earlier. The greater part of the immediate import needs of the war-ravaged countries of eastern and southern Europe, and a sizable part of the import needs of China, were met by relief shipments, mainly through UNRRA, and by transfers on credit of war surpluses located in those regions.

IMPORTANCE OF EXPORT CONTROLS

Governmental trade controls, in so far as they were decisive regulators of the movements of commerce during the year, were for most countries exceptionally important on the export side. These took several forms: international allocating bodies, principally the successors to the wartime Combined Food Board and Combined Raw Materials Board; agreements between various pairs of countries as to the goods for which they would facilitate shipment to each other; and export licensing controls of individual governments. The international allocating bodies endeavored to provide for the most equitable distribution among the nations of the limited supplies of the particular commodities under their control. The export controls of individual governments were usually guided by the desire to prevent undue drain upon supplies needed by their own peoples, and to hold down domestic price advances. Frequently, such controls were used to assist in obtaining needed products from abroad by making the permitted exports to a particular country dependent upon what that country could supply in return.

Very few governments made major changes in their import duties during the year, although a number of tariff revisions is in preparation. In some cases, these are being held up until the prospect as to price levels and the general trend of post-war trade policies becomes clearer. In so far as governments could exercise choice as to the character, volume, or source of the goods imported into their territories, the principal controls used have been import license or exchange permit systems.

Only a few countries relaxed during 1946 the administrative import controls they had in operation at the opening of the year, and some countries even tightened them or introduced new regulatory measures. China was prominent among those which extended rather than relaxed their import controls, although in some measure that tendency was evidenced also in a number of countries of Europe and Latin America. These actions are largely attributable to the fact earlier mentioned, that most countries had as yet achieved only a moderate degree of economic readjustment to post-war conditions. Particularly on the part of the countries of Europe that had been involved in the war, strict licensing control of most imports continued the rule, in order to make the best use of their limited financial resources in the face of unusually large import needs.

GOVERNMENTAL INTERVENTIONS IN FOREIGN TRADE

In general, the extent of direct governmental intervention into import or export transactions of the types developed during or immediately after the war was reduced during the year. Exceptions to this general trend are Argentina and most of the countries of eastern Europe,[1] which are moving toward a high degree of governmental control of their entire economies, with foreign transactions either reserved to official agencies or conducted under their close direction. Most official purchasing missions, so prominent a year ago, especially in the overseas trade of Western Europe, were either in process of liquidation or were curtailing the scope of their operations by the end of 1946. Broadly speaking, arrangements for the great majority of products are progressively being returned to private importers or groups of them, although still subject to governmental licenses for many individual transactions or for the transfer of funds in settlement of them. As an exception to the general rule, however, even certain countries of Western Europe apparently intend to continue governmental purchasing, or at least close official direction of private purchasing, of selected basic import commodities for some time to come, and in some cases also of certain foreign equipment for reconstruction or modernization.

Most of the large-scale intergovernmental procurement arrangements entered into during the war have been terminated or are tapering off. However, official bulk purchase contracts of a peacetime character, covering large parts of the importing country's needs of selected basic foods or industrial materials, were a prominent feature of the 1946 trade programs of a number of countries, notably the United Kingdom. These recent bulk purchase agreements appear to have several common characteristics.

---

[1] Throughout this review, the term Eastern Europe is used in referring to the following group of countries: Poland, Czechoslovakia, Hungary, Yugoslavia, Albania, Rumania, and Bulgaria. The term Western Europe is to be understood as including Scandinavia.

Although broadly arranged for between governments, the actual transactions are in most cases to be consummated by private traders. Moreover, while some governments have declared a definite preference for centralized bulk procurement of certain staple import commodities, the majority of the contracts actually entered into during the year seemed temporary arrangements, and prompted largely by the uncertain prospects as to supplies or markets and as to the stability of prices during the transitional period. In only few cases do the initial terms run beyond a year or two, and even within that period the arrangements are often subject to modification in the light of the conditions under which supplies of the particular commodities become available from other countries.

BILATERAL AGREEMENTS

A striking feature of 1946 was the exceptionally large number of agreements between various pairs of governments regarding commercial transactions between their nationals. These agreements typically include lists of products, the shipment of which each government is to permit or facilitate, up to a specified quantity or value, through the operation of its particular export control system. Permission to import them into the country of destination seems commonly assumed. Settlement is usually through clearing accounts set up in the respective national banks, in order to minimize uncovered balances and to require the least transfers of currencies or gold. Barter deals have seldom figured except in the arrangements with certain countries of Eastern Europe. Only rarely have these arrangements provided for the governments themselves to supply or buy the products involved.

Such agreements have been most common among the countries of Continental Europe and certain of the Latin American Republics. In the inter-European agreements, a rough annual balance in the value of the goods exchanged is usually aimed at, with only limited overdraft permitted, except in those few cases where definite lines of credit are extended by the more prosperous country.

Usually negotiated for not more than a year, the great majority of the many recent arrangements of this type appear to be makeshifts, and do not necessarily imply a fixed program or preference for bilateralism as against open competitive trading. Typically, what each country is primarily seeking is assurance of supplies of particularly needed commodities from the other, with the least drain upon its own products or hazard of excess exports becoming frozen credits.

In most instances, these temporary arrangements to make possible a controlled if limited resumption of trade between the particular pair of countries are understandable. They afford a means of carrying on the most essential exchanges of goods until greater freedom of choice in foreign trading is made possible for these countries, through more ample availability of goods to buy and to sell, through the accumulation of exchange reserves, and through the expected assistance of the International Monetary Fund in facilitating the normal multilateral settlement of trade balances. Only a few of the bilateral agreements concluded during the year carried evidence of definite intention on the part of the contracting countries to give special preference to each other's needs or products, without regard to the possible limitation upon the reasonable access of third countries to their goods or markets.

TRADING WITH THE OCCUPIED AREAS

Thus far, such shipments as have been made into or out of Germany and Japan have either been carried through by the respective occupying authorities or arranged by them. In addition to the imports of supplies necessary to maintain the prescribed minimum living standards, the occupying governments have arranged to ship in certain raw materials for local processing, with the advances paid for from the exports of the manufactured products. In order to offset the costs of these official imports, and to resume the supplying of distinctive peacetime products of Germany and of Japan to the countries which had come to depend upon them, the occupying authorities began during 1946 to encourage local production for export and to find foreign markets for it.

The major part of the export products that have become available to the United States authorities have been disposed of in nearby countries under inter-governmental arrangements, against goods or dollars, although actual deliveries may be made to private merchants. The goods in which American buyers have expressed interest have thus far been handled through the U. S. Commercial Company, as emergency intermediary. From Japan, the principal product shipped to the United States has been raw silk and, since that is duty-free, no customs problem has been involved. From Germany, the early shipments have been cleared through the customs by the U. S. Commercial Company.

The early resumption of private trade between the United States and the occupied countries has been announced as the definite official objective. However, the opening up of direct purchases by American importers of dutiable products from either Japan or Germany waits upon the settling of a number of problems, among them the working out of a satisfactory basis for their customs valuation, since no established home market values yet exist in either country. This and other difficulties arising from the lack of a commercial exchange value for the mark and the yen have been temporarily avoided by pricing mainly in dollars.

An economic merger of the British and American zones of Germany begins in 1947, with the way left open for the Russians and the French to join. This merger is expected to afford a broader basis for foreign trading, as well as to facilitate inter-zonal exchanges and, within a few years, to make possible a self-supporting German economy.

PROSPECT FOR FREER AND CONCERTED TRADE POLICIES

Despite the current confused and constricted international trade situation, the very facts of the continuing general economic unsettlement and of the need for resorting to awkward improvisations in trade policies, at a time when nations feel so keenly their dependence upon each other, appeared to improve the prospect for the long term. They seemed to make many governments more responsive than they were before the war to the idea of acting jointly, in devising means for promoting the recovery and trade expansion of each through international consultation and reciprocal accommodation.

Following the ratification by 40 governments of the Bretton Woods Agreements, the first steps taken toward broad international collaboration in the financial field were the completion of the organization of the International Monetary Fund and the International Bank and preparations for early operation. The International Fund, in announcing in December acceptance of the existing exchange rates of 30 countries as their initial post-war parities, from which no material changes may be made without prior consultation, took the first concrete step toward world currency stability. This fixed the basis also upon which the Fund is to begin performing, in March 1947, its authorized function of assisting member countries in temporary exchange difficulties, by making available to them limited quantities of particular foreign currencies needed for freer import operations, and thus gradually facilitating the shift back from restrictive bilateral settlements to multilateral trading.

On the essential companion program in the trade field, encouraging progress was made in the fall of 1946 by the Preparatory Committee for an International Conference on Trade and Employment, which was convened in London by the Economic and Social Council of the United Nations. Working on the technical level, the representatives of 18 important trading countries reached broad agreement upon plans for the formation of an International Trade Organization, upon a tentative draft of a charter of standard principles of liberal commercial conduct, and upon a concrete program for their early implementation.

The broad objective of the program is the general expansion of the production, exchange, and consumption of goods. It is sought to achieve this mainly through reduction of trade barriers and discriminations in world commerce, and of unduly restrictive trade practices of private or public origin; under certain circumstances, through inter-governmental arrangements regarding the marketing of selected primary commodities; and through concerted action to assist the programs of member countries for high employment and economic development, under safeguards to minimize the possibility of measures in the interest of one country operating to the injury of others.

The full International Conference on Trade and Employment, at which this comprehensive program is to be placed before the nations generally, is now planned for the latter part of 1947. Before that is convened, a testing out of its feasibility is to take place in April at Geneva. In conjunction with the perfection of the draft charter for an International Trade Organization at that meeting, the same 18 governments are preparing to negotiate consolidated trade agreements for the reciprocal reduction of the barriers to trade with one another, in order to give practical effect among themselves to one of the main objectives of the Charter, as the basis and pattern for a world program.

Prospective developments during 1947 should, therefore, be highly significant in showing how far the important trading countries of the world can find it possible to agree upon common operating principles and reciprocal undertakings toward these large objectives of acknowledged desirability. The London meeting of fall 1946 indicated that the chief difficulties will probably come from the necessity of reconciling the obligations involved in such a program with two factors: first, the need felt by many of the war-ravaged countries for an extended transition period before they would be ready to give up the arbitrary and often discriminatory trade controls and practices which they now consider necessary; and second, the strong desire on the part of various under-developed countries for sufficient freedom to restrict imports when that is found necessary to support their programs for diversification and, especially, industrialization.

The working out of methods for satisfactory commercial intercourse with those countries resorting largely to state trading in some form, constitutes another of the difficult problems to be faced in 1947. In view of the distinctly minor place in the aggregate volume of world trade of the commerce of the countries which operate predominantly on a state-trading basis, the formation of an International Trade Organization, embracing the principal trading countries, is not dependent upon their immediate adherence. Earnest effort is being directed to the solution of this problem, however, in order to obtain the the broadest possible participation of the nations in the prospective concerted program for freer and fuller world trade, in the interest of greater general prosperity and durable peace.

PUBLIC ACCOUNTING

By Carman G. Blough
Director of Research, American Institute of Accountants

AUDITING

The year 1946 was one of readjustment, during which accountants turned their attention from the solution of wartime problems to the clarification of certain fundamental auditing concepts. Although no major developments in auditing principles were announced, the profession, through the committee on auditing procedure of the American Institute of Accountants, embarked on a number of studies which are expected to constitute a material contribution to the business community and to society in general.

The study of auditing standards is of particular interest since careful observance of such standards is essential to the continuing significance of the auditor's report. While many reports have stated that the examination was made in accordance with "generally accepted auditing standards applicable in the circumstances," the nature of these standards has never been set down authoritatively by the profession. The committee, therefore, devoted considerable attention to evolving a statement setting forth the standards of professional proficiency and performance which should always govern the independent public accountant in his examination of financial statements.

A useful pattern in which to arrange these standards is provided by dividing the discussion into three phases: (1) General Standards, (2) Standards of Field Work, and (3) Standards of Reporting. General Standards are concerned with the technical training and proficiency of the auditor, the independence he must maintain in his mental attitude and approach, and the care he must exercise in the performance of his examination. "Standards of Field Work involve the adequacy of the preparatory planning of the field work, proper evaluation of the existing internal control for the determination of the extent to which audit testing procedures are to be restricted, and competence of evidential matter. Considerations relating to Standards of Reporting include adherence to accepted principles and practices of accounting, observance of consistency in their application except where conditions warrant otherwise, and the adequacy of informative disclosures.

A statement along these lines should do much to clarify the underlying principles which control the nature and extent of the evidence which the auditor obtains by means of auditing procedures.

Another problem with which the auditor is presently concerned is a determination of the extent to which he can reasonably assume responsibility for the reporting of transactions and other events taking place after the close of the fiscal period for which he is certifying financial statements. There are two major categories into which these events fall. The first is made up of those events which, as hindsight, throw light on the fairness of the representations made in the financial statements and, if availed of, have the effect of substituting more accurate data for some that, at the close of the fiscal period, could only be estimated. Events classified under this category would include, for example, settlements of claims or receivables due from others and settlements of liabilities or claims against the company as at the balance sheet date on a basis substantially different from that initially reflected in the accounts at the date of closing.

The second category is composed of events which the reader of financial statements would find significant in projecting the financial accomplishments of the year into estimates of future accomplishments. They are events which would not change any of the amounts on the financial statements currently under examination because they throw no light upon the accuracy of the estimates of matters reported in the statements as of the balance sheet date. Events, such as an important fire loss or acquisition of substantial plants as well as changes in the management of the corporation or the signing of an important marketing agreement, fall into this class.

The importance of reporting significant events occurring subsequent to the close of the fiscal period is widely recognized. However, the independent public accountant can not accept an audit type of responsibility for ascertainment of these occurrences since it is generally impossible to make an examination of the results of a company's operations and of its financial position at a date coincident with the date of his report. Accountants differ as to whether they should undertake any responsibility for the disclosure of these events. Some hold that, since the accountant's opinion in this regard can not be based upon a thorough examination, he should refrain from attempting to deal with them. Others, however, point out that it is customary for the accountant to scan the accounting records for, and obtain representations from, the management regarding major events occurring up to the time his field work is completed. They suggest that accountants could reasonably assume responsibility for the disclosure of such events when they come to his attention.

These views are receiving the careful consideration of the accounting profession with a view toward developing a generally accepted demarcation of the accountant's responsibility in this regard.

The educational phases of auditing have also received the attention of the Institute's committee on auditing procedure. Its project for the development of case studies illustrating the audit procedures adopted in the actual examination of a variety of businesses is expected to be particularly beneficial to those preparing to enter the profession.

GOVERNMENTAL ACCOUNTING AND AUDITING

The growing determination of Congress to provide itself with adequate accounting information as a basis for judging the accomplishments of government agencies was demonstrated by the passage during 1945 of legislation relating to the financial activities of certain government corporations. This legislation provided for the submission of business-type budgets of operations to the President and the Bureau of the Budget, and for annual audits performed by the General Accounting Office in accordance with principles and procedures applicable to the examination of commercial corporate financial statements. Following passage of this legislation, there was created, within the General Accounting Office, a Division of Corporation Audits. Persons with wide experience in both public and governmental accounting practice were appointed to this division, so it is with particular interest that the accounting profession noted its reports.

The report on Federal Prison Industries, Inc., which, as the first submitted, is expected to set the pattern for reports of other corporations, undoubtedly provided Congress with the most complete and intelligible information it has ever received with regard to this organization. It describes the organic authority of the corporation, its organization and management, its activities and general policies; comments on operations for the fiscal year, exceptions by the auditors to financial programs or transactions of questionable legality or propriety; comments on its financial position, the scope of the audit, and the financial statements, which are accompanied by an opinion expressed in much the same language as is contained in the opinion paragraph of the standard short form of auditor's report.

The results of the division's examination of the financial activities of the Reconstruction Finance Corporation, as presented in a memorandum addressed to the Board of Directors of the RFC, received considerable public notice and emphasized the value of such examinations to Congress in its endeavors to maintain financial control over the activities of such governmental corporations. The memorandum stated that the accounting records of the RFC and its affiliates did not afford an adequate basis for the preparation of financial statements which would fully disclose the financial position of the enterprises at any date or the results of their operations for any period, citing specific examples indicating failure of the accounting function to provide adequate financial control. It also suggested an approach to the solution of this problem.

Although the memorandum was subject to much heated criticism by certain representatives of the RFC, it made Congress cognizant of a situation which merits consideration and, possibly, corrective action. This view is supported by the recent appointment of a controller to supervise the RFC's accounting operations.

The year 1946 also marked the first of a series of reports concerning Federal government corporations to be based on an audit conducted by a public accounting firm under the direction of the Corporation Audits Division. This report dealt with the audit of the Federal Deposit Insurance Corporation for the fiscal year ended June 30, 1945, and, while offering suggestions for improvement in certain specific instances, commended the Corporation's general accounting practices.

Other government units have also made contracts with accounting firms under which the latter have examined the accounts of business organizations or government corporations. Among the government agencies reported to have retained public accounting firms for this purpose are the Termination Division of the Army Signal Corps and the War Assets Administration. The program adopted by the latter is of unusual interest since it appears to have retained one or more accounting firms under a special contract to examine the accounts of agencies, generally business organizations, designated by the Administration to dispose of surplus government property and to report to the Administration on such examination.

These applications of public accounting techniques to government operations under a statutory requirement are undoubtedly of historic significance. The results are sufficiently encouraging to indicate to Congress that it is on the right road to financial control, efficiency, and economy in government.

LEGISLATION

The experience of the few state legislatures which convened in 1946 indicates that in 1947 there will be a multitude of bills introduced to amend existing CPA laws. If the pattern of the past is followed, such amendments might result in a lowering of the standards which many certified public accountants consider necessary in measuring the qualifications of a person desiring to practice as a CPA. This lowering of standards would be brought about by the substitution of special, less difficult examinations for persons with long accounting experience, or for veterans, in place of the regular written examinations which are now required of all candidates for a certificate; by the lowering of education and experience requirements for certain groups; or by setting up a continuing class of licensed or registered public accountants, without examination, which would exist indefinitely, side by side, with the certified public accountant.

The purpose of CPA legislation, the first of which was passed 50 years ago in the State of New York, is to protect the public interest through restricting the use of designations indicating competence or the expression of opinions, upon which third parties may rely, by unqualified persons. Certified public accountants have, therefore, resisted movements which would tend to lower professional standards or permit the continued existence of a second class of accountants who may use a similar designation without being required to give evidence of their qualification to perform public accounting work in a professional manner.

The American Institute of Accountants has urged passage of legislation providing for the registration of two types of persons: (1) "public accountants," those persons who are not certified public accountants but who are currently engaged in the practice of public accounting, and (2) certified public accountants. It is proposed that only registered persons may render opinions upon financial statements or other accounting matters in the capacity of public accountants or auditors, and that the registration of noncertified public accountants be restricted to those currently engaged in the practice of public accounting. It is believed that in this manner *bona fide* public accountants, in practice at the time the legislation is enacted. will be protected, while, at the same time, provision will be made for the eventual registration of only one class of public accountants, those who have given evidence of having met specified standards as to education, experience, and professional proficiency, and have been successful in passing the CPA examination.

ACCOUNTING FOR THE USE OF SPECIAL WAR RESERVES

In October 1946, the committee on accounting procedure of the American Institute of Accountants issued Accounting Research Bulletin No. 26 *Accounting for the Use of Special War Reserves.* A previous bulletin (No. 13) issued by the committee had recognized the propriety of the creation of reserves by charges against current revenues for foreseeable expenses, costs or losses applicable to such revenues but which were to be incurred or determined in a future period. Special war reserves had a clear function in enabling the proper allocation to wartime revenues of war-business costs such as those costs directly related to the reconversion of war plant and facilities. These costs obviously could not be incurred until after the war.

In Bulletin No. 26 the committee endorses the view that charges against a war reserve ordinarily should be restricted to the expenses, costs, or losses incurred during a relatively short period after the termination of war production within which reasonable peacetime operations can be resumed and to the expenses and costs incurred after that time which are clearly attributable to plant reconversion or otherwise clearly identifiable as costs of war production. A correlative policy also sanctioned by the committee would consign as proper charges to *peacetime* revenues those costs and losses which may arise from such causes as: (a) strikes occurring after the resumption of peacetime operations; (b) failure to achieve full peacetime production because of material or other shortages; (c) failure to make profits on peacetime products because of the limitations of price ceilings or because of the lack of full production; and (d) inventory losses on peacetime products from future deflationary price adjustments.

As a corollary to its restrictive viewpoint with respect to those items of expense, cost or loss considered to be proper charges to war reserves, the committee calls for the prompt determination of charges to special war reserves and the early resolving of the remaining expenses, costs, and losses for which the reserve will be carried. The balance of the special war reserve should be adjusted to the amount which reasonably may be required for the applicable items of expense, cost or loss still to be incurred, such items being clearly designated, and excess reserves, if any, should be eliminated.

Critics of the committee's recommended treatment would generally favor a much broader definition of the "war cycle," and consequently would consider as proper charges to war reserves many expenses, costs, or losses which usually arise in a disrupted post-war situation or in the economic dislocations which are the aftermath of a war. However, the committee is of the opinion that if such expenses were to be excluded from the costs of doing peacetime business (by using war reserves to absorb them) because they might have been unnecessary if there had been no war, the resulting statements would hardly be realistic. The committee also sees a danger in the possible misuse of reserves to effect an equalization of earnings as between different accounting periods and considers full revelation of all charges to reserves as important but not as a remedy therefor.

EMERGENCY FACILITIES

In its Accounting Research Bulletin No. 27, *"Emergency Facilities,"* issued in November 1946, the Institute's committee on accounting procedure concluded that special adjustments of past accounting for emergency facilities may in some cases make possible the preparation of more useful and significant financial statements. The basic problem with which the bulletin is concerned arises from the fact that during the war many companies accelerated the depreciation of emergency facility costs for financial accounting as well as for tax accounting purposes.

The committee re-emphasizes the concept that depreciation accounting is basically a process of cost allocation, not of valuation, a system of accounting which aims to distribute the cost or other basic value of tangible capital assets over their estimated useful lives. This procedure has as its objective matching the costs of facilities against the revenues obtained from the productive use of such facilities. Under most circumstances, over- or under-depreciation in former accounting periods is corrected, if at all, by revised rates applied against the remaining undepreciated costs in the current or subsequent periods. Moreover, underestimates of the useful lives of some assets are frequently found to be offset by overestimates of the lives of others, so that in the annual operating results no material or significant change would be effected by a restatement of asset values. However, the committee enunciates the general principle that useful financial statements are not ordinarily achieved by an under-statement or an over-statement of asset carrying value which perforce is to be accompanied by an over-statement or under-statement of future income because of materially excessive or deficient prior allocations of costs.

Accordingly, a majority of the committee has taken the following position: Where the facts clearly indicate that the accelerated amortization or depreciation of emergency facilities at rates permitted for tax purposes has resulted in a carrying value materially less than the costs reasonably chargeable to revenues to be derived from the continued peacetime use of the facilities, and where such difference would have a significant effect upon the financial statements, the adjustment of accumulated amortization or depreciation of such facilities is appropriate. This policy would be feasible when emergency facilities can reasonably be expected to have a continuing use in peacetime years and when the amounts of such assets and the annual depreciation charges thereon are large in relation to the total property in use and significant in relation to the annual net income.

INCOME AND EARNED SURPLUS

Both the Institute's committee on accounting procedure and the various professional publications have been devoting an increasing attention to the income statement and the many controversial accounting and financial questions it involves. The need for a more adequate definition of "net income" and a refinement of the purposes the income statement is to serve is well recognized. On the one hand, net income is defined, according to a strict proprietary conception, as the increase in earned surplus which has taken place within a period excluding, of course, adjustments for dividend distributions, transfers to and from earned surplus reserves, and losses recognized in quasi-reorganizations. This broad conception of net income is best described as the "all inclusive" approach. On the other hand, a different concept places emphasis upon the relationship of cost and income items to the operations, and to the year, excluding from the income account any material extraordinary items which are not so related. This latter approach, which has sometimes been called the "earning performance" approach, would design the income statement to aid those primarily interested in the future prospects of the business as indicated by the results of the ordinary flow of operations.

Accountants recognize the inherent limitations of the term "net income"; that the latter is not a homogeneous datum but a *composite value* reflecting various elements of income, expense, profit and loss; that allocations of both cost and income items affecting the determination of net income as between years are in part estimated and conventional and based on assumptions as to future events; that the ultimate distinction between "operating" income and costs and "non-operating" gains and losses has not satisfactorily been made; that the term "net income" is used lavishly and often without precise definition in the financial press, annual reports, management compensation contracts, bond indentures, etc.; that investors often attach an undue significance to a single figure of net income per share, *et al.* The recognition of these inherent limitations of the term "net income" is fundamental to any improvement in income statement presentation.

It is believed that the most useful form of income statement would be a compromise between the two basic concepts of "net income" and that consideration should be given to the use of a statement which would combine both viewpoints. To this end it has been suggested that a statement be adopted which would include all income elements given recognition in the accounts during the year. The first section of such a statement would show an amount designated "Net Income" or "Net Income for the Year" which would include all items except those which are very unusual in nature or relate to a prior year and are so great as materially to affect the significance of the net income. Any such items would then be reported as either additions to or deductions from "Net Income."

Thus, "Net Income" or "Net Income for the Year" would be designed to represent the results of the ordinary operations and would have considerable significance in formulating judgments as to the current progress and earning performance of the enterprise under the conditions of that period. Items in the second section would in general reflect significant adjustments of prior years' operating costs or income, material losses of a type not usually insured against, and "windfall" gains, so-called capital gains and losses, and the write-off of a material amount of intangible assets or deferred charges. The final figure would be the amount to be carried to surplus and would be the same as the final figure in an "all inclusive" statement.

INVENTORY PRICING

Another matter to which the Institute's committee on accounting procedure is currently devoting its efforts is the question of inventory pricing. The major objective of accounting for inventories is the proper determination of periodic net income through the process of matching appropriate costs against revenues. The various acceptable methods for determining cost for inventory pricing purposes are aimed at arriving at a conservative value for the inventory on hand at the end of a period and determining the cost of the goods sold during such period. The committee is agreed that the primary basis of accounting for inventories is cost, *i.e.*, the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location.

The rule for pricing inventories, which has general acceptance among accountants, is known as the "cost or market, whichever is lower" rule. The merit of this rule is primarily that of conservatism. Application of the rule has the effect of recognizing in the income statement losses in the value of the inventory on hand due to price declines but not recognizing enhancement in the value of the inventory (unrealized gain) due to a rising price level.

In attempting to refine the meaning of "market," as used in the term "cost or market, whichever is lower," the committee has tentatively arrived at the following definition: "Market" means current replacement cost (by purchase or by reproduction, as the case may be) except: (1) Such amount *should not exceed* the net realizable value (*i.e.*, estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal); and (2) An amount representing the "market" value of an inventory *should not be less than* net realizable value reduced by an allowance for an approximately normal profit.

It is believed that the eventual publication of a formal bulletin on the subject of inventory pricing, a bulletin which among other things would include a definition of "market," would have a clarifying effect for the profession and would lead to a more universal understanding of inventory pricing principles.

INCOME TAXATION

The Revenue Act of 1945, which in general applies to corporate income tax returns beginning with the calendar year 1946 and fiscal years beginning in 1945 and ending in 1946, was primarily designed to aid both individuals and businesses in the transitional period from war to peace. Under its provisions, individual taxpayers, estates, trusts, and corporations are benefited, the latter to a much greater degree than the others. The principles and procedures developed by the Bureau of Internal Revenue and the United States Tax Court through interpretations, rulings, and decisions with respect to the Internal Revenue Code, and Revenue Acts embodying amendments thereto are, of course, important for professional accountants.

The latest Revenue Act repealed the excess profits tax on corporations, a measure which during wartime taxed all corporations, first at 90 per cent, later at 95 per cent with an overall 80 per cent limitation, on taxable income in excess of the corporation's average earnings for the 1936-39 peacetime years, or alternatively, on income in excess of "normal" earnings arrived at by applying a statutory percentage rate of return to average invested capital in the base years. Generally speaking, the "normal" earnings were taxed at a 40 per cent rate.

The latest act also repealed the capital stock tax and the declared value excess profits tax on corporations in addition to certain relatively minor use taxes. Accountants had looked upon the former two taxes as factors adding an unnecessary complication to the corporate tax structure. Such taxes, relatively speaking, had never been large revenue-producers from the Bureau's viewpoint, and accomplished nothing that increased normal plus surtax rates could not have achieved.

In addition to the above, together with many technical changes concerning which we will not belabor this presentation, the act reduced normal tax and surtax rates on individuals and the surtax rate on corporations. Although no corporate excess profits tax return need be filed for taxable years beginning after Dec. 31, 1945, the provisions of the law dealing with the computation of the excess profits credit are continued in effect for 1946 in order that an unused excess profits credit for such year may be determined. Accordingly, it is possible to carry back an unused excess profits credit originating in 1946 to 1944 and 1945 and obtain a refund of the resultant reduction in excess profits taxes paid for such years. Thus the extent to which a corporation's net taxable income dips below the "norm" in 1946 is considered to represent the "unused excess profits tax credit," and the corporation is afforded the opportunity to replenish its funds by obtaining refund of the excess profits taxes paid in the war years on the unused credit amount.

Of course, myriad tax problems challenge the ingenuity and technical prowess of the accounting profession's practicing members each year. The discussions and recommendations of the committee on Federal taxation of the American Institute of Accountants, as well as those of committees of state societies of certified public accountants which cooperate closely with the Institute, focus upon taxation matters considered to be of most immediate and universal importance. During the year 1946, they have given particular attention to the differences that have been developing between income tax accounting methods and generally accepted accounting principles and practices used in the determination of income with a view to advising congressional committees with respect to amendatory legislation conforming taxation requirements with accounting viewpoints generally accepted by the profession. It has been reported that the staff of the congressional Joint Committee on Internal Revenue Taxation has been working on a simplification and recodification of the Internal Revenue Code. Also, under the new Federal Administrative Procedure Act, changes in Bureau regulations hereafter will be submitted for public comment prior to adoption. This will be a boon to the accounting profession in that it will forestall enactment of many regulations conflicting with generally accepted accounting procedures.

The accounting profession and especially the Institute's committee on Federal taxation have been interested in achieving an effective administration of Section 722 of the Internal Revenue Code. As mentioned previously, under the wartime excess profits tax law a corporation was taxed at the high excess profits tax rates on all taxable income in excess of its average earnings for the 1936-39 peacetime years, or alternatively, on income in excess of "normal" earnings arrived at by applying a statutory percentage rate of return to average invested capital in the base years. Section 722 had been enacted into law by Congress to afford relief to certain corporate taxpayers who could demonstrate that the incidence of the excess profits tax was "excessive and discriminatory" in their case. Generally speaking, if the corporate taxpayer could show that a change in the nature or character of its business took place whereby actual average net income in the years 1936-39 was not representative of the normal earning potential of the corporation, a higher "constructive" average base period net income might be used. The high excess profits tax rate would then be levied only on those wartime taxable profits in excess of the higher "constructive" net income as established for the base years.

Under Section 722, the burden of proof was upon the corporate taxpayer to demonstrate that the excess profits tax was "excessive and discriminatory." The taxpayer might attempt to prove in some factual manner that its average base period net income was an inadequate standard of normal earnings. Any one of a variety of conditions might be used as a basis for such a demonstration. For example, the occurrence of unusual or peculiar events affecting the taxpayer's business experience, depression of the taxpayer's business in the base period due to temporary and unusual economic circumstances relating to the individual case or to the particular type of industry, existence of a profits cycle differing materially in length and amplitude from the general business cycle, or any one of a host of circumstances might effectively demonstrate the need for special relief under the act. Also, a corporate taxpayer using a percentage of invested capital to arrive at average base period earnings might seek to demonstrate that invested capital was abnormally low in base years, capital was not an important income-producing factor in its business, or perhaps that intangible assets not includible in invested capital make an important contribution to income.

The administration of this section

prior to 1946 was the subject of severe criticism by the public and Congress alike. Compliance with congressional intent when Section 722 was enacted called for the exercise of a high degree of judgment applied to the facts of a particular case and called for the solution of high-level economic and accounting problems. Accordingly, the American Institute's committee on Federal taxation, together with others, made recommendations before the Congressional Joint Committee on Internal Revenue Taxation looking toward establishing a highly qualified body charged with the exclusive duty of administering Section 722 and urged that the majority of appointments thereto be made from outside the Bureau.

During the year these recommendations were put into effect by the appointment of an Excess Profits Tax Council composed of accountants, lawyers and business men, of whom a majority were from outside the government, to administer Section 722. This Council has established Field Committees in each field division of the Bureau's Income Tax Unit under the technical supervision of the Council but under the administrative supervision of the internal revenue agent in charge. These committees recommend to the Council the amount of constructive average base-period net income to be allowed on each claim, subject to review by the Council before which the taxpayer is entitled to a hearing. Jurisdiction of the Excess Profits Tax Council, in Section 722 cases, now supersedes that of the Bureau's technical staff except in certain cases now before the staff and nearing completion. It is believed this new administrative set-up will provide for a more expeditious and judicious disposition of this important relief provision of the law.

LIFE INSURANCE

By JAMES S. ELSTON

ASSISTANT ACTUARY, THE TRAVELERS INSURANCE COMPANY

INSURANCE IN FORCE AND NEW BUSINESS

The legal reserve life insurance in force in regular companies Dec. 31, 1946 is estimated by the Life Insurance Association of America at about $174,000,000,000, nearly 12 per cent greater than at the end of 1945, the previous highest amount. This includes $116,000,000,000 Ordinary Insurance, $30,000,000,000 Industrial, and $28,000,000,000 Group.

The new paid-for business for the year, not including revivals or increases, is estimated at $23,500,000,000, an increase of nearly 50 per cent over 1945 and $5,500,000,000 above the previous record of 1929. The new Ordinary is approximately $16,800,000,000, about 35 per cent above the 1929 record; Industrial $4,500,000,000, 4 per cent above the previous highest amount of 1936; and Group $2,200,000,000, 10 per cent above the previous record of 1943. The insurance lapsed or surrendered was comparatively at about the lowest level it has ever been. The combined assets are estimated at $48,000,000,000 and the payments to policyholders and beneficiaries at $2,800,000,000, of which about 46 per cent represents death claim payments to beneficiaries.

WAR SERVICE INSURANCE

There is also insurance in force of about $7,000,000,000 in fraternal orders and assessment organizations and $2,500,000,000 of U. S. Government life insurance on veterans of the First World War. The amount of National Service Life Insurance in force decreased from $120,000,000,000 at the end of the war to about $38,000,000,000 Sept. 30, 1946. In the rush of demobilization, the service men were not impressed enough with the advantages of the insurance. Some were financially unable to continue the full $10,000, and some did

LEGAL RESERVE LIFE INSURANCE *

(Dollars in Millions)

	Income—Disbursements			Assets—Liabilities—Surplus	
	1945	1944		1945	1944
Total Premium Income	$5,249	$4,869	Real Estate	$ 857	$ 1,061
Investment Income	1,444	1,387	Mortgages	6,636	6,674
Other Income	981	755	Bonds	32,606	28,537
			Stocks	999	704
Total Income	7,674	7,011	Collateral Loans	3	4
			Loans to Policyholders	1,962	2,134
Death Claims Paid	1,282	1,203	Cash	780	711
Matured Endowments	414	361	Deferred and Unpaid Premiums	638	576
Annuities and Disability	310	291			
Surrender Values Paid	241	235	All Other Assets	316	653
Dividends to Policyholders	472	438			
			Total Admitted Assets	44,797	41,054
Total Paid Policyholders	2,719	2,528			
			Liabilities	41,090	37,805
Other Disbursements	1,500	1,444	Surplus†	3,707	3,204
Total Disbursements	4,219	3,972			

* *Spectator Insurance Year Book*—All United States companies (348) in 1945.

† Includes amount set apart for dividends to policyholders during following year and special, voluntary, contingency, etc., reserves.

NEW ISSUES—TERMINATIONS—INSURANCE IN FORCE

	1945	1944	1945	1944
	Ordinary Business		Group Business	
New Issues	$ 10,944	$ 9,526	$ 1,519	$ 2,158
Terminations:				
Death	937	881	179	164
Maturity	248	210	—	—
Surrender	641	581	22	23
Lapse	1,459	1,363	176	256
Other	758	728	2,850	224
Total	4,043	3,763	3,227	667
Insurance in Force	104,456	97,577	22,770	24,446
	Industrial Business		All Lines of Business	
New Issues	3,970	3,723	16,433	15,407
Terminations:				
Death	236	205	1,352	1,250
Maturity	161	151	409	361
Surrender	340	273	1,003	877
Lapse	1,604	1,312	3,239	2,931
Other	274	271	3,882	1,223
Total	2,615	2,212	9,885	6,642
Insurance in Force	28,497	27,048	155,723	149,071

not need it. Under the unprecedented amount of correspondence, accounting, and other work, the Veterans Administration could not cope with all the requests for information and service. There was considerable dissatisfaction with several features; no single sum payable to a beneficiary; beneficiary requirements too strict; no conversion to endowment insurance possible; and no income disability provision included. On Aug. 1 Congress enacted legislation which tended to eliminate the objections to the coverage, and it is hoped that future lapsation will be much less and that much will be reinstated. The life insurance companies and their agency forces rendered great service in assisting the men with their problems and educating them on the value of the N. S. L. I.

LIFE ANNUITIES

At the beginning of the year there were over 2,719,000 life annuities in force for an aggregate annual income of $866,200,000, of which $203,200,000 was actually being paid, $312,000,000 deferred but paid for, and the balance being paid for. The total was divided between $529,100,000 individual annuities, $275,300,000 group annuities covering 1,500,000 American workers, and the balance supplementary contracts, involving life contingencies payable to insured after maturity of endowments and to beneficiaries after death of the insured. Much of these funds was available for spending if they had not been left with the insurance company by the recipient. As said before, this represents intelligent family planning and sound financing for the future welfare of American homes, but it is also an important additional contribution to the anti-inflationary savings of the nation.

DISTRIBUTION OF COMPANY INCOME

In a tabulation by the *Spectator* of 46 of the largest and oldest companies the distribution of $1.00 income for 1945 is worked out approximately as follows:

Death Benefits	$ .168
Paid Living Policyholders	.191
Settlement Options	.048
Added to Assets to Enable Companies to Pay Future Benefits	.445
Total	.852
Commissions and Agency Expenses	.064
Home Office Salaries	.017
Taxes and Fees	.020
Investment Expenses and All Other Operating Costs	.030
Total Expenses	.131
Asset Adjustments (Profit or Loss)	.017
Total	$1.000

The investment income was more than sufficient to meet all expenses. The total paid policyholders, together with the amount reserved to meet future policyholder claims, was greater than the premiums paid by policyholders. From a tabulation of 25 of the largest companies, it appears that in 1945 about 33 per cent of the claims were arranged to be paid under optional modes of settlement as compared with 12 per cent in 1930.

There has been great development in Group accident and sickness, accidental death and dismemberment, hospital expense insurance, surgical benefits, and medical expense insurance issued by life companies because many employers have broadened the Group coverage they had previously.

INVESTMENT DISTRIBUTION

A distribution of investments at the end of 1946 is estimated by the Life Insurance Association of America as:

	1946	1941
Government bonds	44.8%	20.8%
State and local bonds	1.2	6.1
Dominion of Canada bonds	2.6	1.9
Public utilities securities	12.7	15.5
Railway securities	6.3	9.0
Corporate securities other than railway and public utilities	8.7	6.7
Farm mortgages	1.7	2.8
City mortgages	12.9	17.9
Policy loans and premium notes	3.9	8.9
Real estate	1.6	5.7
Cash and miscellaneous	3.6	4.7

Perhaps the most notable change in the distribution of assets in 1946 was in the corporate securities investments other than railways and public utilities, which have reached the all-time high ratio second only to public utilities, among the corporate holdings of the life companies, having now surpassed railroad investments for the first time on record.

A comparatively stationary point has been almost reached in investment in United States Government securities, which now approximate $21,500,000,000, only about $917,000,000 above the 1945 amount. The Life Insurance Association of America comments: "The beneficial effect on the national economy of federal debt ownership by insurance companies and other private investors has been recognized and is being implemented by the United States Treasury through its policy of selective redemption instituted this year. This policy is aimed toward reducing ownership of the debt in channels where it constitutes a basis for commercial credit expansion with attendant inflationary effects. If continued, it may increase the proportion of federal debt held by life companies, even though their holdings decline in dollar value."

COMPANY FINANCING OF RENTAL HOUSING

More than $150,000,000 worth of rental housing, representing homes for an estimated 75,000 persons, is either already under construction by the companies or is scheduled to be started within the next year, it was reported at the end of July by the Institute of Life Insurance. This brings to more than $275,000,000 the total of rental housing being financed by the companies on an ownership basis and to 150,000 the number of persons to be housed by these projects. There are now a number of companies directly active in the construction or operation of housing projects in ten states from California to New York. Many of them are self-contained communities, with a large percentage of the ground devoted to park and recreation areas, representing a new type of planning for densely populated areas. There are at least 20 companies, in addition to those already active, which are keenly interested in possible future housing projects, but some are barred by local laws from immediate action and others are withholding current commitments because of the present high costs involved.

POLICY LOANS

A reduction in the rate of interest on policy loans on large loans was made by one company to meet the competition of banks and in the hope that the average rate of interest earned by the company could be increased by the company's eventually securing some of the loans which would have gone to banks. Considerable discussion developed as to the merits of this plan. It has been claimed that it is discrimination to charge a lower rate of interest to a policyholder with a large loan than to one with a small loan. Such a large proportion of the loans are very small, and the proportion of total policy loans to total investments is so small that other companies doubt that the plan would have any beneficial effect on the average rate of interest earned, and if reduction in loan interest on large loans should lower the average rate earned, the net insurance cost to all other policyholders would be increased. Also the perennial argument is raised that it is undesirable to make policy loans attractive because it would lead in a large proportion of cases to eventual surrender of the policies.

As has been emphasized for several years, one of the most important problems, if not the most important, is the continued low rate of interest earned. There is reason to hope that the low point has been passed on new investments, but it does not seem safe to assume that any marked increase can be expected at least for some time. Unless this rate increases, the cost of life insurance will increase gradually (except as counteracted by improved mortality) until the average rate on all assets, including old investments at high rates, approximately equals the rate on new.

The net rate earned, according to the Institute of Life Insurance dropped in 1945 to a new low of 3.07 per cent compared with a rate of 3.19 per cent in 1944, and 3.61 per cent in pre-war 1940. The present rate is one-fourth less than the average in the 30's. If the previous year's rate had still applied, the return on American policyholder funds would have been $50,000,000 greater in 1945, a sum equivalent to more than 10 per cent of the total dividends paid to policyholders.

The effect of the decline in the past 15 years has not been fully apparent in actual policy costs, as there have been several offsetting factors: the death-rate among policyholders has been for a number of years considerably lower; the expenses of operation have been reduced in relation to income; and there have been other sources of gain, largely of a nonrecurring nature, such as profit from sale of real estate and securities. Nevertheless in this period some increase in life insurance costs has been necessary.

DEATH BENEFITS

According to a compilation of the Institute of Life Insurance at the end of September the following death benefits had been paid under regular life policies owned by members of the armed forces.

(Entire War Period up to Sept. 30, 1945)

	Number	Amounts Paid
Killed in Action . . .	194,000	$200,000,000
Accidental.	60,000	80,000,000
Disease.	18,000	33,000,000
	272,000	313,000,000

The latest tabulations available of the Veterans Administration reveal that dependents of more than 372,000 deceased Second World War veterans are receiving National Service Life Insurance benefits. As of Nov. 1, the face value of the awards exceeded $3,488,000,000. The average amount of insurance in force at the time of the veteran's death was about $9,300. The average monthly payment is approximately $50, and in over 75 per cent of the cases the veteran's beneficiaries will receive the monthly payments for the rest of their lives. Parents are the sole beneficiaries in 65 per cent of the cases and widows in 23 per cent. The Veterans Administration is also paying monthly disability benefits to approximately 1,647,000 Second World War veterans. Of the claims received and adjudicated, approximately one out of every two has resulted in an award.

STANDARD NON-FORFEITURE AND VALUATION LAWS

George A. Bowles, Virginia Insurance Superintendent, has made a strong plea for the adoption by the rest of the states of the Standard Non-forfeiture and Valuation Laws recently passed in most of the states, stating: "When I took office as president of the National Association of Insurance Commissioners in 1936, there was a great deal of criticism of the life insurance industry for the use of the antiquated mortality tables. Many people seemed to believe that the companies were taking advantage of their policyholders by overcharging them for their insurance. . . . I indicated my resolve to appoint a committee of the best available actuaries to study this problem and to develop a new mortality table. After advising with a great many Insurance Commissioners, the committee of state insurance department actuaries, now known as the Guertin Committee, was appointed. . . . There was no demand from the companies for such a committee, and many of them seemed to think such a study both unnecessary and unwise. This committee labored over several years. Its reports have been recognized as factual and unbiased. . . . The revised proposal was then unanimously adopted by the National Association of Insurance Commissioners.

"The important point I want to make is that it was not and is not a company program. . . . It was conceived by the Commissioners in the interest of the public. In its formulation, the committee received the cooperation of the companies and after its formulation, it received the support of the industry organizations very largely because they had come to see the necessity of action on this subject, and because of the fairness of the program to all parties concerned.

"I am sure that the lack of support for this program wherever it may arise results only from lack of understanding of what it is and what it will do. . . . If the people and the legislators of the states where this legislation has not yet been adopted will realize the tremendous effort which has been put in its preparation in the resolving of conflicting viewpoints in the public interest, that the experts dealing with this matter have considered all the elements entering into the fair treatment of policyholders, and that it has the wholehearted support of the Insurance Commissioners of the United States. they will accept it as highly enlightened and progressive legislation."

Most of the companies were engaged in 1946 in preparing for the adoption of the Commissioners Standard Ordinary Mortality Table as the basis of reserves and surrender values in their policies. A few companies have actually adopted the new table. Under present conditions policies have to conform to both the old and the new laws. The Northwestern Mutual has just announced that they are issuing new business on the 2 per cent CSO Table as of Jan. 1, 1947.

Joseph B. Maclean, former President of the Actuarial Society of America, has explained as well as could be in non-technical language why the new laws will not increase the cost of insurance: "It can be said, however, that the use of a modern mortality table will not increase the total cost of insurance protection but should result in a more equitable distribution of the total costs according to age and duration and is therefore in the interest of the whole body of policyholders. It is important to realize that if (as is quite probable) there is any general increase in the cost of life insurance it will not be because of any of the effects of adopting the proposed standard legislation. It will be because the combination of lower interest earnings and higher expenses is more than enough to offset any continuing improvement in mortality rates. It is the actual experience as to mortality, interest and expense, not the assumptions, which determine the cost to the policyholder."

VETERAN EMPLOYMENT IN INSURANCE COMPANIES

Nearly 50,000 veterans had been employed up to the end of June by life companies, according to an estimate by the Institute of Life Insurance. The business had 45,400 of its personnel enter the armed forces, of whom 800 were killed in action.

	Returned to Company	New to Company
Home Office.......	9,300	1,400
Branch Office........	2,600	200
Ordinary Agents.....	4,500	8,200
Industrial Agents.....	11,600	9,700
	28,000	19,500
Total.......................47,500		

RIGHTS OF STATES IN INSURANCE TAXATION AND SUPERVISION

The rights of the states in taxation and supervision of insurance were affirmed in certain respects by the U. S. Supreme Court in June. After insurance was declared to be interstate commerce, question arose about discrimination of certain state tax laws against companies domiciled in other states, and various court actions were instituted in several states. The question reached the Supreme Court from a South Carolina statute, which ruled that that particular statute was valid. In the other case the right of California to license not only agents but to exclude entirely companies in interstate commerce, which did not comply with the state solvency requirements, was upheld.

HEMISPHERIC INSURANCE CONFERENCE

The first hemispheric insurance conference ever held took place in New York in May. Many of the leading figures in insurance from a large number of countries attended, including many from Latin America. The main advantage of the conference was the greater understanding by insurance men of the different countries of the problems and viewpoints of each other. The conference covered all lines of insurance—not detailed problems but the more general aspects of the different lines of insurance from the viewpoints of these countries, the keynote being "Insurance—the Symbol of Private Enterprise."

MEDICAL RESEARCH FUND

The Medical Research Fund established under the auspices of the companies has now been operating for 15 months and has had available $735,000. Grants have been made to assist 54 research groups in 43 medical schools and hospitals spread over 31 states, the District of Columbia, and including six awards to medical schools in Canada. In addition 20 fellowships have been awarded.

FIRE INSURANCE

By Edward R. Hardy

Secretary-Treasurer, Insurance Institute of America, Inc.

FIRE LOSSES

The presentation of the monthly statistics on fire losses are taken from the reports of the National Board of Fire Underwriters. These statistics have been used for many years because, being compiled on the same basis, they furnish a sound foundation for comparison. In the year 1946, the fire losses were $561,487,000. These figures, as formerly, are for the losses by fire and lightning. A glance at the losses for the two years preceding, set forth in the adjoining table, will show an extraordinary increase.

The increase in fire losses might arise from the increase in the actual number of fires or from a larger loss by fire, if only the same number of fires occurred. In the latter case it would be owing to the increased value of properties, and the natural result by fire would be greater. As a matter of fact there are no statistics giving the number of fires that occurred in a given year. It would be difficult to define just what is a fire, possibly, and to bring together accurate statistics would be a very large job indeed. It took many years to persuade all

FIRE LOSSES BY MONTH

	1944	1945	1946
January	$38,572,000	$44,865,000	$49,808,000
February	38,280,000	41,457,000	51,759,000
March	39,084,000	40,876,000	53,252,000
April	34,746,000	37,950,000	52,153,000
May	32,815,000	34,153,000	46,094,000
June	30,555,000	34,090,000	44,240,000
July	32,706,000	34,054,000	40,998,000
August	30,618,000	34,096,000	40,019,000
September	31,448,000	32,447,000	40,256,000
October	32,173,000	34,470,000	40,108,000
November	33,847,000	37,393,000	44,706,000
December	48,694,000	49,478,000	58,094,000
Total 12 months	$423,538,000	$455,329,000	$561,487,000

the states and territories to prepare their reports of deaths on a uniform blank which could be used for compiling statistics for the country. It probably would take at least a decade, if not three, to collect reliable reports from each state and territory concerning the number of fires. The attempt has been made to keep a record of the number of fires in the United States and Canada which had a loss of $10,000 or more, but this account when brought together showed only a fraction of the total losses. This means that a large amount of the loss occasioned by small fires, less than $10,000, has a great significance.

Not only from the property but from the loss of life point of view, the year 1946 was outstanding, especially in hotel fires. The fire in the hotel in Atlanta, Ga. (Dec. 7, 1946) is said to have occasioned the largest loss of life of any hotel fire, not merely for 1946 but for preceding years. These losses where life was involved to a serious extent have led to a re-checking of the fire prevention work. It stimulated the civic conditions of cities and towns where the losses occurred and finally to a re-checking of all properties where life may be involved in a fire, such as, hotels, etc. The result will probably be beneficial, but it has not yet brought about any new knowledge in regard to fire prevention. It was its lack of application which made it possible for the disasters that have occurred.

STANDARD POLICY OF FIRE INSURANCE

The standard policy of fire insurance, which began its career in New York State, July 1, 1943, has now been adopted by 41 states, two territories—Alaska and Hawaii—and the District of Columbia, although with variations in eight states. The Massachusetts standard policy, with statutory variations, is used in four states. California, Iowa, and Texas have statutory standard policies which differ considerably from the other forms. It is possible, with the changes to be brought about in the conduct of the business by Jan. 1, 1948, that everywhere in the United States and its territories the standard policy of 1943 will be used.

LEGAL CHANGES

As a result of the decision of the Supreme Court, in 1943, that insurance should be classified as commerce and so subject to United States Government regulations, there has been an enormous amount of work done and must continue to be done in 1947 because, by Jan. 1, 1948, every state that wishes to retain the control of fire insurance must have its laws in conformity with the decision of 1943. Should any state fail to provide for this purpose, the United States Government will take over, at least that part of the regulations that do not conform to the decision of 1943.

In order to comply with the 1943 decision of the Supreme Court, a committee known as the All-industry Committee was organized for the purpose of drafting a measure which would embrace the views of the business and the regulating bodies of the various states as a necessary compliance with the purposes sought, bringing together state and United States regulation. Two proposed measures may be said to embrace this purpose, and while a final decision will not be reached until nearer 1948 these conclusions undoubtedly bear a high degree of approach to agreement by the parties interested.

The casualty and surety representatives proposed a Rate Regulatory Bill and the same is true of the fire, marine, and inland marine Rate Regulatory Bill. The casualty suggestions were submitted for casualty and surety, and the other for fire, marine, and inland marine. There will, therefore, be some difficulties, but the final outcome will be the same, namely, to suggest agreements upon a bill for all lines of the business, subject to regulation under the decision of 1943. The principal problem was the determination of rate-making and the activities which grow therefrom. These are numerous; they always have been and probably will continue to be. There is considerable insistence that the bills as drafted shall invite competition but that competition shall be regulated so as to prevent abuses.

FIRE GRADING OF BUILDINGS

There has just been published in Great Britain, No. 20 of Post-War Building Studies, Part I, to be followed by three more parts, devoted to fire grading of buildings. It is a pamphlet of more than 100 pages and is a very comprehensive study of the subject. It has been published for the Ministry of Works by His Majesty's Stationery Office and may be secured in this country at the British Information Services, Rockefeller Plaza, New York. It is undoubtedly the outgrowth of the bombardments of the Second World War. The joint committee is composed of the Building Research of the Department of Scientific and Industrial Research and of the Fire Offices' Committee, and was formed early in 1942. Of the three remaining parts to be published, Part II will be *Fire Fighting Equipment in Buildings*, Part III *Means of Escape* and Part IV *Chimneys and Flues*. It will be interesting to see if such a comprehensive piece of work has any effect in the United States. The problem here would be quite different for no other reason than the fact that such a high percentage of our building construction is frame.

THE OUTLOOK

If one were to undertake the character of a prophet, two possible changes will take place. The safest one to predict is that there will be a growing tendency to have policies that cover a wider scope than existing policies. The business grew up on a single line plan of underwriting, that is, fire insurance not coupled with any other line. After casualty insurance was introduced, for many years there was no tendency for many years to suggest a union of such lines with the fire policy. In fact the laws did not permit it, but with the development of even the single device, such as the automobile, there was a demand for the private owner, at least, to have this included in his fire policy. In other words, the tendency grew and will continue to grow to make the policy of insurance more like a blanket policy in its coverage than was the practice hitherto. The decision of the Supreme Court in 1943 would appear rather to hasten this development than to retard it. There is no reason why, properly developed and controlled, a policy may not be evolved which will take care at least of the property of the private owner under a single coverage, except life. To an extent, this may be included in the business coverage, but that may not prove to be quite so necessary especially where larger interest is involved. The year 1948 ought to prove the answers to many of these questions.

CASUALTY INSURANCE AND CORPORATE SURETYSHIP

By William Leslie

General Manager, National Bureau of Casualty and Surety Underwriters

---

STATE LEGISLATION

Rate Regulation.—Kentucky and Mississippi, two of the nine states meeting in regular session in 1946, enacted casualty and surety rate regulatory laws, making a total of 11 states with Alabama, Connecticut, Florida, Kansas, Maryland, North Carolina, South Dakota, Tennessee, and Texas, that have enacted such laws since the United States Supreme Court decision in 1944 holding that insurance is commerce and, when crossing state lines, is interstate commerce. Louisiana enacted legislation directing the Secretary of State to adopt a new insurance code to be submitted to the 1948 session of the legislature, and the Virginia legislature directed the Advisory Legislative Council to recommend necessary changes in the insurance laws.

Workmen's Compensation. — As usual there was a considerable volume of legislation on workmen's compensation. California and New York enacted laws providing for increases in benefits. Georgia can now be added to the list of states in which occupational diseases are covered under workmen's compensation. Kentucky enacted a law which makes workmen's compensation compulsory as to certain named hazardous occupations, and which includes "silicosis" within the definition of "injury." Both Kentucky and Alaska adopted laws setting up special second injury funds to take care of compensation to partially disabled employees sustaining subsequent injuries.

Automobile Financial Responsibility.—The trend toward strengthening the automobile financial responsibility laws continued, with Kentucky repealing its existing law and substituting one including the requirement of furnishing security in the event of an accident. Missouri enacted a new financial responsibility law, applicable to convictions and unsatisfied judgments but not requiring security in the event of accident.

Health Insurance.—About 25 bills providing for compulsory health insurance were introduced but California alone adopted such legislation. However, New Jersey, Rhode Island, Massachusetts, and Virginia set up special commissions to study the problem, and in New York a bill was passed to continue the special commission created in 1945 to formulate a long-range state health program.

Miscellaneous.—Missouri and New York approved multiple line legislation. A bill was enacted in New York authorizing the Superintendent of Insurance, in his discretion, to prescribe, by regulation, uniform classifications of accounts to be observed, and statistics to be reported by insurers and other organizations.

FEDERAL LEGISLATION

Among the measures which the 79th Congress enacted in 1946 was a law amending the Social Security Act by freezing the present tax rate of 1 per cent payable by employees and employers, and a law relating to claims against the United States (Federal Tort Claims Act). The President's Reorganization Plan No. 2 which, among other things, transferred the functions of the U. S. Employees' Compensation Commission to the Federal Security Agency, became effective July 16, 1946, upon the failure by Congress to disapprove the Plan. The U. S. Employees' Compensation Commission formerly administered the District of Columbia and Longshoremen's and Harbor Workers' Compensation Laws.

WORKMEN'S COMPENSATION INSURANCE

The *Workmen's Compensation and Employers' Liability Insurance Manual* was revised effective Oct. 1, 1946 to permit the elimination, for premium computation purposes, of the remuneration of individual employees in excess of an average of $100 per week for the total time employed during the policy period. Concurrently, the manual rates were increased for a few classifications where it was decided that a sufficient amount of remuneration would be eliminated to be measurable. The rates for other classifications where the effect is minor and thus not readily measurable were not changed, although it was recognized that this payroll limitation will affect all classifications in some degree.

Recognizing that the present payroll basis of exposure has certain disadvantages which are accentuated in periods of abnormal industrial activity or periods of depressions, study is being given to either a modification of the present payroll basis or the adoption of an entirely different basis of exposure. In order to obtain factual information on the practical problems involved, actual audits on various bases are being made of representative risks. The exposure bases which are being analyzed are various payroll limitations, man hours, man days, and man weeks. This study will disclose just what basic records are kept by employers generally, what checks or controls are available for the verification of original records, and the amount of time spent by the auditor in obtaining the various data. This information will be extremely valuable in determining whether there is a satisfactory substitute for the present payroll basis of exposure.

The National Council on Compensation Insurance has prepared consolidated reports of the information reported by 167 carriers in the Casualty Insurance Expense Exhibit covering the calendar year 1945. The National Association of Insurance Commissioners has authorized the appointment of a committee of departmental experts to cooperate with the industry in the preparation of supplementary instructions designed to produce up-to-date information on the gradation of workmen's compensation expenses by size of risk. It is believed that such additional information can be obtained as a supplement to the Casualty Insurance Expense Exhibit for calendar year 1946, thus becoming available for rate-making purposes in 1947.

There has been no change in the basic rate-making procedure that has been in effect in recent years. The two most recent policy years for which experience data are available are used for rate-making purposes. The 1946 rate revisions produced a further decrease in rates in some states, but in many others an increase in rates was necessary. This means that the favorable trend in loss experience has leveled off and that hereafter more rate increases may be indicated.

MISCELLANEOUS LIABILITY INSURANCE

Of the many changes in the miscellaneous liability field during 1946, the most extensive and perhaps the most important was the second revision of the comprehensive personal liability policy. The policy, first brought out in 1943, is a broad-coverage, single-limit policy insuring individuals for liability for personal as distinguished from business acts and omissions, and also affording medical payments coverage for injuries, regardless of liability, arising out of the premises or caused by activities of the insured. The revision resulted in considerably more coverage at no increase in premium charge, a simplification of the policy language and the introduction of several new features of coverage available on an optional basis. Some of the important changes were: (1) broadening of medical payments coverage to include, without additional premium charges, coverage for accidents away from the premises caused by activities of an insured, by the activities of a residence employee while engaged in the employment of an insured, or by an animal in the care of an insured; (2) broadening of the definition of insured to include as insured, persons under the age of 21 not related to but in the care of an insured; (3) broadening the definition of premises covered by the policy; (4) providing for coverage on a non-caused-by-accident basis (except as to medical payments) so that any occurrence involving liability for sickness, disease, death, or destruction is covered except if caused intentionally by or at the direction of the insured.

The substantive revision of the comprehensive personal liability program was accompanied by other changes relating to premium charges for this coverage. In this connection, the factors for increased limits of liability were reduced, an amendment to the basis-of-premium rule was introduced to provide that no charge applies for residence employees whose time of employment is not more than one-half of the customary full time, and manual rates for business pursuits and for watercraft were adopted. Simultaneously, other amendments were made in the several liability manuals and significant was the revision of the farm employers' liability rates, the adoption for contractual liability insurance of several new classifications and rates, and revisions in existing rates and classifications.

Many other developments of consequence and general interest took place in 1946. The employers' liability rates in Mississippi were revised resulting in an average reduction of 22.4 per cent. A payroll limitation rule was adopted for manufacturers' and contractors' liability, workmen's compensation and employers' liability insurance, providing for the elimination, for premium computation purposes, of wages of any individual employee in excess of an average of $100 per week. New classifications and revised rates and minimum premiums for butane and propane dealers for manufacturers' and contractors' and product liability insurance were announced. The 1 per cent surcharge for comprehensive liability insurance was eliminated. A rating program was promulgated for completed-operations coverage for the State of New York in connection with proposed extensive highway construction. Rules, rates, and a standard coverage for residence water damage and explosion insurance and aircraft and other vehicle damage under combination residence policies were also promulgated.

Any review of miscellaneous liability insurance would be incomplete without brief mention of developments directly relatable to the termination of the war. A new wrecking classification and rates for manufacturers' and contractors' liability insurance were established covering the dismantling in sections or panels of dwellings not exceeding three stories in height, for re-erection in connection with the Federal emergency housing program for veterans. The underwriting rules, classifications, rates and minimum premiums previously established for the Defense Plant Corporation were made applicable to the United States in connection with surplus properties owned by the Government and leased through the War Assets Administrator. Finally, the amount represented by the retroactive wage increases for stevedoring operations in certain ports retroactive in most cases to Oct. 1. 1945, to the date on which such increases were approved, were excluded in computing manufacturers' and contractors' liability, workmen's compensation and employers' liability premiums.

AUTOMOBILE LIABILITY INSURANCE

The most outstanding development during 1946 in the field of automobile liability insurance was the steadily mounting cost of settling claims, especially those involving property damage. Near the close of 1945, the private passenger automobile bodily injury rates had been increased to a level somewhat below that existing prior to the war and, similarly, the property damage rates were increased to a point slightly above the pre-war level. Before the end of the first six months of 1946, however, the increasing claim costs and accident frequency made it necessary that additional rate increases of a substantial nature be established. The average claim cost for the first six months of 1946 for bodily injury was 27 per cent above the 1941 cost, and for property damage it was 83 per cent above the 1941 level. It seems apparent that the rate increases announced during 1946 for private passenger automobiles will not be sufficient to make it possible for companies to meet the mounting loss costs and greater accident frequency which have prevailed since the termination of gasoline rationing. The appalling record of highway accidents and fatalities throughout the nation in 1946 has caused real concern to Federal authorities and to state motor vehicle departments.

In April, 1946, the automobile medical payments insurance applicable to private passenger automobiles and school buses was extended to apply to commercial automobiles, funeral cars, private livery, public livery, taxicabs, and buses. Under this form of coverage the insurance company agrees, without any regard for liability, to pay medical expenses, including funeral expenses, resulting from bodily injury caused by accident. Simultaneously with this improvement, an entirely new and improved method for rating commercial automobiles was established, recognizing the present day conditions in the automobile industry and state registration requirements for commercial automobiles. Also, a decided improvement in the procedure for rating automobile dealer and repair shop risks was made available.

The final steps in the development of the fourth revision of the standard provisions for the basic automobile liability policy were taken near the close of 1946. This revision. which accomplishes a simplification and clarification of policy language. is soon to be made available for use.

BOILER AND MACHINERY INSURANCE

Losses in 1946 were of grave concern to the companies. During the recent war years, when industry was producing at peak capacities, it was not always possible to make the necessary inspections or to replace worn equipment. This condition is now being reflected not only in an increased loss ratio but also in the occurrence of large losses. To cite an instance, one recent loss far exceeded any previous catastrophe loss in the history of boiler and machinery insurance. A new edition of the *Manual of Boiler and Machinery Insurance* was prepared for introduction throughout the country, becoming effective Jan. 1, 1947. This manual represents essentially a rearrangement and clarification of the material in the previous manual.

BURGLARY, THEFT, AND ROBBERY INSURANCE

The success of the Money and Securities Broad Form Policy, which provides all-risk coverage on money and securities for commercial firms. has been largely responsible for the introduction of additional broad form policies this year. Two new policies were introduced and a third developed to facilitate a form of coverage previously made available by endorsement to an existing policy. The first, the Paymaster Broad Form Policy, covers the actual destruction, disappearance, and wrongful abstraction of money and checks intended solely for the payroll of the assured. The premium is based on the rates for the regular paymaster robbery coverage plus a nominal loading for the so-called all-risk feature. The other new policy was placed on the market in December and is known as the Excess Securities Coverage for Banks Policy. This form was designed to meet the needs of banking institutions for additional coverage on securities in excess of the blanket bond normally carried. The rates for this coverage have been designed to produce a somewhat higher premium than that produced by the usual Bank Burglary and Robbery policies, because the new form is on an all-risk basis but lower than cost of a blanket bond for such excess amounts since the policy does not cover infidelity of employees as is the case under the blanket bond. It is believed that these forms will prove as popular as the other broad form policies now available. The Securities Insurance Policy was developed to facilitate the handling of insurance on securities deposited for safekeeping with a bank or trust company. This coverage was formerly made available through the Public Officials Policy, but the rates and coverage are the same as heretofore.

Since the Residence and Outside Theft Policy was substantially broadened in 1943, the loss ratio has steadily increased and is still a point of major interest. Present indications point to a possibility that the present rate scale will not be sufficient to carry the policy in spite of increases effected during the year. The premium volume for burglary lines has been increasing steadily over the past few years and has now reached an all-time high. There is good possibility that the volume will not show any decline during the coming year, because such factors as the scarcity of most materials and finished articles, the increased values of all property, and the sharp rise in criminal activity throughout the nation act as a constant reminder to the public of the need for burglary insurance.

GLASS INSURANCE

The major point of interest in 1946 was the steadily increasing loss ratio which had risen sharply over previous years. Owing largely to the strikes in the glass manufacturing industries, a serious shortage was created throughout the country which brought about some unusual conditions directly affecting the cost of settling losses. The insurance companies found many instances where a plate size had to be cut from a much larger size resulting in considerable waste, or because the glass was not available at all, the opening had to be boarded up until the replacement could be made. Replacement costs were further affected by price adjustments during the period of Federal price control, and since the removal of controls additional increases have been recorded with indications pointing to still further rises in the near future. It would appear that the present rate scale is not sufficient to carry the policy, and further rate increases will be necessary.

ACCIDENT AND HEALTH INSURANCE

In the field of accident and health insurance the most important development was the effort on the part of the industry to develop more complete regulatory legislation, the purpose of which would be at once to eliminate from the business publicly harmful practices and to meet the demands of the Federal Government as expressed in Public Law 15. The casualty and surety rate regulatory bill. not being applicable to accident and health insurance principally because that branch of the business is personal insurance, much of it being written by life insurance companies. accident and health interests gave consideration to a revision of the existing Standard Provision Law, in order to modernize that law and appreciably to increase the amount of regulatory authority contained therein.

Of equal importance were efforts on the part of the industry to satisfy public demands, expressed in part by legislation being introduced into many state legislatures and the Congress, for health insurance coverage spread over a larger segment of the population. Studies were made, the purpose of which was to give a clearer and more accurate picture of the degree of coverage already in force. Studies were also made of the problems surrounding the granting of coverage to a larger portion of the rural population. Insurers also established points of cooperation with the medical profession with a view to writing minimum medical, surgical, and hospital costs coverages—all to the end of supplying basic protection to a larger proportion of the population.

In the latter part of 1946 the task of revising the occupational classifications manual was begun. Such revision has been made necessary by changes in the hazards of industry, brought about principally by improved industrial methods developed during the war. New occupations will be classified, many now classified will have to be reclassified, occupations now obsolete will be omitted. The task is expected to be completed by the end of 1947 and in such a manner that thereafter the manual will always be up-to-date.

BROADENING OF AIR ACCIDENT POLICIES

Despite predictions of greatly increased air travel in the years immediately ahead, accident policies were again broadened, so far as aviation hazards are concerned, to Jan. 1, 1949 to cover passenger airline travel anywhere in the world and to cover passenger travel in private planes within the bounds of North America, all without additional cost to the policyholder. Coverage was further extended to include ground coverage for insured engaged in the aviation industry. The extension of individual accident and health policies to members of the Armed Forces within the continental United States, without additional premium and despite policy exclusions to the contrary, was continued on the same basis as it has been since the outbreak of the war.

GROWTH OF ACCIDENT AND HEALTH INSURANCE

The remarkable growth of this branch of insurance, so noticeable during the past few years, continued, particularly in the field of group insurance, although the rate of growth declined somewhat in 1946 with the falling off in the rate of increase of employment. Public interest in accident and health insurance, however continued its unprecedented increase and insurers increasingly tried to meet the demands with desired coverages. Medical, surgical, and hospital expense coverages appeared to increase in popularity, as did the franchise or wholesale method of underwriting. Accident and health premium volume for all types of carriers including life insurance companies reached a new high of $600,000,000 in 1946 with an estimated 50,000,000 persons insured by insurance companies and Blue Cross plans. Loss ratios favorably affected the past several years by wartime full employment and greatly restricted use of the automobile, now threaten to climb appreciably with the full scale and increased use of the automobile, increased medical, surgical, and hospital costs arising out of the generally increased cost of living, rapid development of and increase in air travel and expected fluctuations in the economic cycle.

SURETY BONDS

The deceptive nature of the increase in fidelity premiums during 1945 will be clearly evident from the premium volume in 1946. It will be recalled that during 1945 many surety companies changed their underwriting practice to permit the writing of fidelity and blanket bonds on a three-year basis at two and one-half times the annual premium. When this change took place, many assureds availed themselves of the opportunity to effect a savings in premium. As a natural consequence, the fidelity premium for 1945 showed a marked increase and the same reasons account for the decrease that they showed in 1946. Despite the change, many companies have indicated success in holding a good fidelity premium volume. During 1946, substantial numbers of new sales were made, and, in addition, increased values caused many prudent insurers to increase their coverage correspondingly.

Surety volume in 1946 fell below expectations. The rigid restrictions imposed by the Government on commercial and public building necessitated the postponement of many undertakings which the surety companies would normally guarantee.

Fidelity losses were substantially increased during 1946. Both the number of claims and the amount of the claims increased. It is difficult to attribute the increase to any one particular factor. No doubt the prevalent crime wave had its effect upon the surety companies. Many losses, however, were of long standing but recently brought to light. During the war, manpower shortages had, in many instances, caused careless practices and inadequate checks and audits. Commerce is now becoming more nearly in balance again, and the renewal of regular and frequent auditing has resulted in the discovery of many speculations which had continued over several years in the past.

One of the outstanding events in the year was the announcement by the surety companies of new forms of Performance Bond and Labor and Material Payment Bond for use in private construction. The old forms used in private work were the same as those used in public work, and, in many instances, were not entirely satisfactory. The new bonds imposed a direct liability upon the surety rather than the ultimate loss guarantee, which was the condition of the old forms. The new forms have created a lively interest in the market, but because of the severe restrictions on building few of them have been used. A substantial demand is anticipated when restrictions on building materials are lifted.

AVIATION LIABILITY INSURANCE

The year 1946 was probably the most difficult as well as exciting in the entire history of world aviation insurance. Large numbers of war surplus aircraft were disposed of to private owners. As the aircraft manufacturing industry was converted to a peacetime status, new makes and models of aircraft were placed on the market, which created for underwriters new and serious problems until the flight characteristics of such aircraft became well known. The year 1946 also saw the advent of the first of the post-war super airliners, which underwriters were called upon to cover, involving extraordinarily high values, limits of liability, and peak potential catastrophe risks.

The aviation insurance market in the United States and elsewhere was materially expanded, new-comers having been attracted to this field by the profitable underwriting experience of previous years. Premium income increased but competition forced rates to a low level. Competition from non-admitted carriers was an important factor in aviation insurance throughout the United States.

The year saw in the United States, and throughout the world generally, a series of airline and charter operation losses that in the aggregate assumed catastrophic proportions. Many of the losses suffered arose out of problems that were to be anticipated in conversion of aviation from military or semi-military character to peacetime conditions. As new and larger equipment incorporating many new features are placed in operation, fresh problems will arise which underwriters realize will require the exercise of the greatest caution and the application of all available knowledge and experience. While loss frequency may decrease, when accidents do occur the amounts involved in losses will continue to rise as has been the case over a period of years.

NET PREMIUMS WRITTEN

(By kind or type of insurance, by all U. S. casualty companies, including state funds, in the calendar years 1942–45).

Kind of Insurance	Net Premiums Written in Calendar Years			
	1942	1943	1944	1945
1. Workmen's Compensation	$590,984,782	$650,417,182	$641,518,082	$614,732,517
2. Automobile Bodily Injury	350,267,017	284,627,763	320,079,518	366,044,029
3. Automobile Property Damage Liability	114,338,583	111,296.922	122,135,971	138,639,024
4. Automobile Collision	52,692,545	49,305,698	56,883,678	81,032,195
5. Liability other than Automobile	120,903,698	127,027,068	133,852,519	146,971,921
6. Property Damage and Collision other than Automobile	12,429,373	14,356,381	14,908,604	18,055,783
7. Fidelity and Surety	111,564,951	90,511,444	85,872,454	107,378,979
8. Accident and Health	144,126,799	164,312,867	198,157,082	220,797,895
9. Burglary and Theft	34,094,794	39,583,159	47,519,113	55,681,032
10. Glass	13,064,456	12,921,875	14,052,123	15,462,340
11. Boiler and Machinery	19,537,812	21,635,411	21,113,731	13,930,164
12. Credit	6,550,623	6,359,256	5,652,019	5,299,939
13. Live Stock	1,062,758	1,014,043	1,118,042	1,191,042
14. Sprinkler	845,599	912,355	1,018,511	1,095,973
15. Automobile, Fire, Theft, Tornado and Miscellaneous Lines	17,374,792	28,391,930	32,570,363	41,725,567
Total	$1,589,838,582	$1,602,673,354	$1,696,451,810	$1,828,038,400
Number of Companies	408	434	444	453

PERIODICAL PUBLICATIONS

Accounting Review
Tappan Hall, University of Michigan, Ann Arbor, Mich.

Annals, The
American Academy of Political and Social Science, 3457 Walnut Street, Philadelphia.

American Banker
32 Stone Street, New York City.

American Business Combined With System
4660 Ravenswood Ave., Chicago.

American Economic Review
Northwestern University, Evanston, Ill.

American Exporter
386 Fourth Ave., New York City.

American Import and Export Bulletin
10 Bridge Street, New York City.

American Insurance Digest and Insurance Monitor
605 North Michigan Ave., Chicago.

Banking
American Bankers Association, 200 Madison Ave., New York City.

Banking Law Journal
465 Main Street, Cambridge, Mass.

Barron's
40 New Street, New York City.

Bond Buyer, The
67 Pearl Street, New York City.

Business Week
330 West 42nd Street, New York City.

Commercial and Financial Chronicle
25 Park Place, New York City.

Controller
1 East 42 St., New York City.

Credit World
1218 Olive Street, St. Louis, Mo.

Eastern Underwriters
41 Maiden Lane, New York City.

Financial Age, The
132 Nassau Street, New York City

Financial World
86 Trinity Place, New York City.

Fortune
350 Fifth Ave., New York City.

Harvard Business Review
330 West 42nd Street, New York City.

Insurance
116 John St., New York City.

Insurance Advocate
123 William Street, New York City.

Insurance Field
234 W. Liberty St., Louisville, Ky.

Insurance Law Journal
350 Fifth Ave., New York City.

Journal of Accountancy, The
13 East 41st St., New York City.

Journal of American Insurance
919 North Michigan Ave., Chicago.

Journal of Business
5750 Ellis Ave., Chicago.

Journal of Commerce
63 Park Row, New York City.

Life Association News
11 West 42nd Street, New York City.

Life Insurance Courant
Oak Park, Ill.

Magazine of Wall Street, The
90 Broad Street, New York City.

N. A. C. A. Bulletin (Bulletin of the National Association of Cost Accountants)
385 Madison Ave., New York City.

Nation's Business
Chamber of Commerce of the United States, Washington, D. C.

National Underwriter
420 E. Fourth St., Cincinnati, O.

Spectator
Chestnut and 56th St., Philadelphia.

Standard
89 Broad Street, Boston.

Trusts and Estates
50 East 42nd Street, New York City.

Weekly Underwriter
116 John Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ECONOMICS

American Academy of Political and Social Sciences, 3457 Walnut Street, Philadelphia.

American Accounting Association, University of Indiana, Bloomington, Ind.

American Chamber of Commerce for Trade with Italians, Inc., 105 Hudson St., New York City.

American Economic Association, Northwestern University, Evanston, Ill.

American Fair Trade Council, Inc., 11 West 42nd St., New York City.

American Home Economics Assn., 620 Mills Bldg., Washington, D. C.

American Institute of Accountants, 13 E. 41st St., New York City.

American Institute of Weights and Measures, 33 Rector St., New York City.

American Petroleum Institute, 50 W. 50th St., New York City.

American Retailers', Inc., 128 W. 31st St., New York City.

American Statistical Assn., 1603 K St., N.W., Washington, D. C.

Better Business Bureau, Nat'l., 405 Lexington Ave., New York City.

Chamber of Commerce of the United States of America, 1615 H St., N.W., Washington, D. C.

Controllers Institute of America, 1 East 42nd St., New York City.

Cooperative League of U. S. A., 167 W. 12th St., New York City.

French Chamber of Commerce of the U. S., 4 E. 52nd St., New York City.

General Society of Mechanics & Tradesmen of New York City, 18 W. 44th St., New York City.

Home Market Club, Inc., 38 Chauncy St., Boston, Mass.

Institute of Economics, 722 Jackson Pl., Washington, D. C.

Institute of Internal Auditors, 120 Liberty St., New York City.

International Accountants' Society, 3411 S. Michigan Ave., Chicago.

Mellon Institute of Industrial Research, 4400 Fifth Ave., Pittsburgh, Pa.

National Assn. of Cost Accountants, 385 Madison Ave., New York City.

National Assn. of Credit Men, 1 Park Ave., New York City.

National Assn. of Real Estate Boards, 22 W. Monroe St., Chicago.

National Bureau of Economic Research, Inc., 1819 Broadway, New York City.

National Foreign Trade Council, Inc., 26 Beaver St., New York City.

National Research Council, 2101 Constitution Ave., Washington, D. C.

National Wholesale Grocers' Assn. of the U. S., 60 Hudson St., New York City.

New York Stock Exchange, 11 Wall St., New York City.

Order of United Commercial Travelers of America, 632 N. Park St., Columbus, O.

BANKING AND CURRENCY

American Bankers Assn., 200 Madison Ave., New York City.

American Institute of Banking, 200 Madison Ave., New York City.

Investment Bankers Assn. of America, 531 First National Bank Bldg., 33 S. Clark St., Chicago, Ill.

National Assn. of Mutual Savings Banks, 60 E. 42nd St., New York City.

New York Clearing House Assn., 77 Cedar St., New York City.

United States Savings and Loan League, 221 N. La Salle St., Chicago, Ill.

INSURANCE

Actuarial Society of America, 393 Seventh Ave., New York City.

American Institute of Accountants, 13 E. 41st Street, New York City.
American Institute of Marine Underwriters, 99 John St., New York City.
American Life Convention, 230 Michigan Ave., Chicago, Ill.
American Management Association, 330 West 42nd St., New York.
American Marine Insurance Syndicates, 99 John St., New York City.
Association of Casualty & Security Executives, 60 John St., New York City.
Casualty Actuarial Society, 90 John St., New York City.
Institute of Life Insurance, 60 E. 42nd St., New York City.
Life Insurance Association of America, 165 Broadway, New York City.
Life Insurance Sales Research Bureau, 115 Broad St., Hartford, Conn.
Life Office Management Assn., 110 E. 42nd St., New York City.
National Assn. of Life Underwriters, 11 W. 42nd St., New York City.
National Assn. of Mutual Casualty Cos., 919 Michigan Ave., Chicago.
National Board of Fire Underwriters, 85 John St., New York City.
National Bureau of Casualty & Surety Underwriters, 60 John St., New York City.
National Council on Compensation Insurance, 45 East 17th St., New York City.
National Fire Protection Assn., 60 Batterymarch, Boston, Mass.
National Travelers Aid Assn., 425 Fourth Ave., New York City.
Surety Assn. of America, 60 John St., New York City.

DIVISION XI

AGRICULTURE AND ALLIED INDUSTRIES

CONDITIONS IN AGRICULTURE

By Arthur P. Chew
Office of Information, Department of Agriculture

GENERAL

After the war ended, the world food crisis faced this and other food-surplus countries with new demands upon their food supplies. Famine threatened whole continents; it was vital to halt the peril, not only for reasons of humanity, but as a means of building peace. This country responded energetically with an export contribution during the 12 months ended June 30. 1946, which was practically double the first estimate of requirements. Most Americans had hoped that the termination of the war would diminish the drain upon the American food supply and put an end to shortages of some items. Instead, the demand changed suddenly from livestock products to grain and for a short time bread became comparatively scarce. Farm operators thought they could restore their normal crop rotation, diminish their acreage of soil-depleting crops. and prepare in other ways for ordinary peacetime conditions. Actually they faced another season of all-out production fully as exacting in its demands as those of the war years.

As the largest source of exportable foods, the United States became the largest supplier of relief foods. This responsibility imposed on farmers many changes in their crop and livestock balance, on processors many changes in their operations, and on consumers many adjustments in the composition of their diets. It involved acceptance of irksome food orders, of food priorities in transportation, of scarcities in items that previously had not been scarce, but the compensation in substantial relief of the world food crisis was adequate. Mass hunger continued throughout vast areas but did not develop into the threatened mass starvation. Huge food exports, principally from the United States, tided the hungry millions over until 1946 crops came in.

FOOD EXPORTS

In the year ended June 30, 1946, the United States exported more than 16,500,000 long tons of foodstuff, chiefly to war-devastated countries where starvation threatened. It accepted a bread-grain commitment for this period of 400,000,000 bushels which was met in full. Specifically, exports of wheat and flour (10,333,000 tons), plus corn and corn products (407,000 tons), reached 402.000,000 bushels. Approximately 5,549,000 tons of bread grains moved out from Jan. 1 through June 30, 1946. Enough more was then on hand at ports to ensure fulfilment, with only a few days of grace, of the six-month goal of 6,000,000 tons. This brought the total to 417.000,000 bushels, an excess of 17,000,000 bushels above commitments.

Estimates in December 1945, when the Department of Agriculture accepted the 400,000,000 bushel commitment, indicated our wheat and flour exports in the second half of 1945 had totaled 175,000.000 bushels. Accordingly, the remaining 225,000.000 bushels (6,000,000 long tons) became the January-June goal. Subsequently, complete records revealed that July-December exports had totaled 192,000,000 bushels. Nevertheless, the Department allowed the goal of 225,000,000 bushels to stand.

In addition to the above-mentioned bread grains, the United States exported rice, oats, rye, and barley. Total grain exports amounted to 11,792,000 long tons in the year ended June 30, 1946. Exports of dairy products in the same period totaled 760,000 tons, of meats 582,000 tons, and of fats and oils 356,000 tons. Other exports included dry peas and beans, potatoes and sweet potatoes, fruits and vegetables, sugar, eggs, and dried fish. Shipments in this category made a total of more than 3,200,000 tons. Out of all the food distributed from United States supplies in 1945-46, one pound in every eight went overseas to foreign countries. More than 40 per cent of the wheat distributed as food was exported, more than 35 per cent of the rice, more than 20 per cent of the cheese, more than 10 per cent of the fats and oils, and about 6 per cent of the meat.

FOOD NEED OUTLOOK

Nevertheless millions were still hungry after this contribution had been made. The relief shipments. plus the 1946 harvests, gave only a breathing spell. Some areas had to stand further ration cuts in 1946. down to bare subsistence levels. Food-production conditions were better than in 1945 over most of the world, but food-crop acreage was still below pre-war average, and shortages of fertilizer and other essentials tended to restrict the yields. If the harvests, not yet fully in at this writing, fulfill the promise of the summer, the world's food output will exceed the low production of 1945, yet it will not be equal to the pre-war average, particularly on a per capita basis. Moreover, preharvest stocks will be extremely low. Total world supplies of food products for the 1946-47 crop year can not much surpass those of the previous year and can not warrant much decline in total world relief shipments.

THE PRESIDENT'S WARNING

A nationwide warning regarding prospective world food shortages came from the President on his return from Potsdam in August 1945. In October the Department of Agriculture reported that the 1945-46 world output of food on a per capita basis would be as much as 10 per cent below the pre-war average, and that shortages would be very unequally distributed by countries. Later reports, reflecting greater drought damage, placed the estimated world reduction on a per capita basis at 12 per cent below the pre-war average, with the reduction running to 50 per cent in North Africa and 25 per cent in Europe. Even in normally food-surplus countries such as Argentina and Australia, food supplies were drastically reduced. It was evident in 1945 that liberated and ex-enemy countries would require substantial food imports, though the great extent of the need was not then fully apparent. In February the President announced a nine-point program. This program, the announcement stated, would inconvenience consumers, food trades and industries, and transportation systems, but the inconvenience would be a small price to pay for saving lives, mitigating suffering, and helping to establish peace.

NINE-POINT PROGRAM

Following were the nine points: (1) campaign to conserve food, especially bread; (2) disuse of wheat and restricted use of other grains for alcohol and beer; (3) extraction of more flour from wheat, and restriction of flour distribution; (4) control over inventories of wheat and flour; (5) rail priorities for wheat, corn, meat, and other essential foods; (6) control over exports of wheat and flour; (7) exports of 365,000 tons of fats and oils, 1,600,000,000 pounds of meat, and increased exports of dairy products particularly cheese and evaporated milk during 1946; (8) provision of more ships to move food exports and bring in Philippine copra for cocoanut oil; (9) conservation of grain in the feeding of livestock.

The President appointed a Famine Emergency Committee, with former President Herbert C. Hoover the honorary chairman, and Chester C. Davis chairman. On this Committee's recommendation he also appointed a National Famine Emergency Council of about 125 members. Administrative responsibility for carrying out this program devolved upon the Department of Agriculture, which appointed state managers and county managers throughout the country, and in Washington established an Office of Emergency Food Programs.

Simultaneously, the Department reexamined its procurement and distribution programs. It issued various orders which reinstated protein meal set-asides, limited the use of grain for industrial and beverage alcohol, increased the wheat extraction rate for flour, restricted mixed-feed production and inventories, and restricted the sale and use of wheat mill feeds. Set-asides on beef, veal, and mutton, which had been suspended Sept. 2, 1945, and reinstituted Oct. 14, helped the meat-export movement. The Department reinstituted and increased the pork set-aside. Also, by broadening the set-aside coverage to include non-federally inspected plants certified as sanitary and by decreasing the number of exempt states it increased the other meat set-asides. In line with the policy of conserving feed, the Department announced that on June 30 the subsidy of 50 cents per pound to cattle feeders would be terminated. This subsidy had encouraged the feeding of grain to cattle and the feeding of cattle to heavier market weights. In the famine-emergency situation the opposite policy became desirable.

U. S. EMERGENCY SERVICE

Thus 1946 did not find the United States unprepared. Organization, science, and effort on farms had placed us in a strong food position domestically, with power to boost our exports quickly. This was evident at once. Exports of agricultural commodities in the January-March quarter exceeded $846,000,000 in value, and were 69 per cent greater than in the first quarter of 1945. Meantime, farmers were ready for another high-production drive, through cooperatively planned crop adjustments and acreage increases, state by state and farm by farm. Federal agencies were ready for emergency service. Using machinery created or developed during the war years, they effectively encouraged continued maximum production, ascertained world food needs, and procured and allocated food supplies.

WHEAT IN FAMINE RELIEF

As a famine-relief food, wheat was especially important. Wheat was not the only food this and other surplus-food countries were sending abroad; the shipments also included coarse grains, fats, beans and peas, rice, dried fruit, sugar, meats, eggs, and dairy products. Nevertheless, wheat was the principal requirement. This was because wheat could be shipped, stored, and rationed more readily and in larger quantities than any other food that would support life. Moreover, wheat was central in the famine-relief situation for another reason. With other foods also very short of meeting the demand, it was convenient to express the deficient calorie requirement in terms of wheat equivalent. Consequently, the estimated wheat requirements reflected not only the demand for wheat as such, but also the demand for unobtainable other foods.

Large wheat exports from the United States took place in the last half of 1945. In that period about 200,000,000 bushels, or nearly five times the average export in the 1932-41 pre-war years, were exported. This total for the second half of 1945 was the export volume for all purposes to all parts of the world. In 1946 the requirements came more predominantly from the relief countries. Because our wheat stocks, mostly located far from the seaboard, were declining rapidly and because the other wheat-surplus countries were likewise approaching the end of their wheat reserves, the relief demand presented an extremely difficult problem. There was no possibility of meeting it in full. So great, in fact, was the spread between the world wheat supplies and the world wheat requirements, that the differential provided a sort of famine barometer, on which attention centered throughout the world. Every available bushel was in demand, and the pressure of the emergency necessitated extreme measures to conserve, collect, and ship this vital bread grain.

EARLY ESTIMATES OF FOOD NEED

About the turn of the year, surveys had assembled a mass of information about the war damage suffered by agriculture in many countries, about the drought losses that took place in 1945 in Europe, Africa, Australia, and parts of Latin America, and about the mounting food deficits of many Oriental countries. Also available at that time were more precise indications about available world food supplies. These included facts with regard to shortages of seed, machinery, fertilizer, and draft power, light on grain collections, and information about other distribution problems. It appeared that minimum world wheat-import requirements for the 12 months—July 1, 1945 to June 30, 1945—would approximate 1,200,000,000 bushels.

The requirement for the July-December period had been largely met; this totaled about 470,000,000 bushels. It was evident, however, that meeting the estimated requirement for the January-June period would be far more difficult. Estimated at 725,000,000 bushels, the total for this period seemed likely to be not more than 60 per cent filled. In fact, even this percentage of fulfillment was sure to put a strain on the wheat resources of the surplus countries. Only the most strenuous conservation and collection program could give any hope at all of coming appreciably nearer to the estimated 725,000,000 requirement. In looking beyond the 12-month period above-mentioned, it seemed probable the world's wheat-import requirements would continue to be high during the rest of 1946.

REDUCTION IN THE COTTON CROP

The 1946 cotton crop was exceptionally small, yet it was bringing farmers the largest gross farm income, from lint and seed together, since 1925 and possibly since 1919. On the basis of the October crop estimate and the average prices received by farmers to that date, gross farm returns from cotton will approximate $1,750,000,000. This would be about 2 1/3 times the 1935-39 average returns, though the crop is 30 per cent smaller than the average for those years. Domestic production costs have increased greatly but not nearly as much as cotton prices. Prices near those now prevailing will encourage farmers to increase their plantings in 1947. Moreover, improvement in the farm-labor situation and in machinery supplies would facilitate increased production.

Stocks of cotton in the United States Aug. 1, 1946, totaled 7,500,000 bales. These stocks, together with the small 1946 domestic crop, indicate a United States supply for the current season (exclusive of imports) about 3,000,000 bales smaller than that of 1945-46, and almost 8,000,000 bales less than at the outbreak of the war in Europe. World stocks of cotton totaled about 21,000,000 bales on Aug. 1, 1946, and were some 4,000,000 bales smaller than a year earlier, though about 3,500,000 bales larger than the 1935-39 average. The reduction in stocks more than offset an indicated increase over 1945 in the 1946 world crop.

CONTINUED DEMAND FOR MEAT

The end of the war brought no letup in the strong domestic demand for meats. Consumer expenditures for commodities and services during 1946 were above the record of 1945. In addition, a pressing need developed for meat to feed people in European countries. Actions by the Department of Agriculture to speed meat shipments to starving people overseas included increases in the first half year in the meat set-asides, and cooperation with the Office of Price Administration in a slaughter-control program to prevent diversion of livestock to the black markets. Military purchases of meat dropped sharply below those of 1943-45, but this reduction was partly offset by an increased domestic demand as military personnel returned.

Meat production continued at near record levels in 1946. Moderately below the 1945 production of 23,000,000,000 pounds, it was around 40 per cent greater than the annual average production of 16,000,000,000 pounds in the period 1935-39. Pork production was up moderately from the 10,000,000,000 pounds produced a year earlier. Beef and veal production, while still large, fell below the record of 11,800,000,000 pounds in 1945. After the pronounced wartime decline in sheep numbers, lamb and mutton production in 1946 was the lowest since 1941, yet it was above that for any pre-war year.

Exports of meat in 1946 were above the 1,200,000,000 pounds shipped in 1945 though below the record of 2,500,000,000 pounds in 1943, in which year the trade was largely on lend-lease account. Meat exports in 1946 were distributed in large part by UNRRA. Other large recipients were France, Belgium, Netherlands East Indies, and United Kingdom. In prewar years these countries, with the exception of the United Kingdom, were not important markets for our meat.

TOBACCO CONDITIONS

Conditions in 1946 were favorable for tobacco. Despite cutbacks in military requirements and the termination of lend lease, total use of leaf in domestic factories was near the wartime peak, whereas exports exceeded pre-war levels. The year's crop was bumper, and early sales by growers were at record prices.

Cigarette consumption in this country has recently been at an all-time high. Cigarette production, about 80 per cent of all tobacco products, has been near the peak reached during early 1945, though overseas shipments have taken only about 10 per cent of the total as compared with more than 30 per cent at the height of the war. With larger supplies available, cigar consumption has increased.

Smoking tobacco consumption, however, has fallen sharply, primarily because more cigarettes have been available. During periods of high income, consumers show a preference for cigarettes. After the closing of war plants, where smoking was generally prohibited, the consumption of chewing tobacco products declined, and is again on the down grade.

Tobacco stands high among agricultural commodities in international trade. The United States is the most important tobacco-exporting country. Stocks of tobacco in many foreign countries during the war became very low and in some instances disappeared. Hence keen competition resulted this year for exportable supplies, and as mentioned, the movement from the United States exceeded pre-war levels. It reflected requirements both for immediate consumption and for rebuilding stocks.

RECONVERSION IN THE WOOL INDUSTRY

Reconversion was effected quickly in the domestic wool manufacturing industry, and use of wool in civilian manufacture in 1946 was at a record peacetime high, some 70 per cent above the 1935-39 average. Nevertheless, through much of the year, supplies of finished products fell short of demand. In the early months of the year there was a serious shortage of men's clothing, owing largely to the return of several million servicemen to civilian life over a space of only a few months. Various problems faced by clothing manufacturers in expanding their output of civilian clothing also contributed to the shortage. In 1947 supplies are expected to be more in line with demand, but a high general level of consumer incomes and the need for replenishing inventories can be expected to maintain wool consumption at levels not greatly below that of 1946 for the next year at least.

To maintain growers' incomes, the Commodity Credit Corporation in 1946 again purchased the domestic clip at ceiling prices. Prices to growers averaged about 42 cents a pound. This average, converted to a mill-point clean-content basis, was materially higher than the equivalent duty-paid price of imported wool on a comparable basis. In order to make domestic wool available to manufacturers at prices more or less competitive with foreign wool, the CCC sold domestic wool through most of 1946 at prices which averaged about 8 cents, grease basis, less than purchase prices. Although large supplies of domestic wool were available from government stocks, mills continued to use imported wool for a large part of their requirements, and government stocks continued large.

SHORTAGE OF FATS AND OILS

The world shortage of fats and oils continued. Liberated Europe wanted at least its pre-war volume of imports, but production in many sources of supply was below the pre-war level. Consumption in several European countries was less than 50 per cent of the pre-war consumption. Even the United States could have consumed in 1946 an additional million tons of fats and oils had the supply permitted. World import requirements for 1946 were from 5,000,000 to 6,000,000 short tons. Supplies available for export from all sources were estimated at less than 3,000,000 tons.

World production of 21 major fats and oils during the period 1935-39 averaged about 21,500,000 short tons in terms of oil. This total included all of the important vegetable oils such as soybean, cottonseed, peanut, sunflower, flaxseed, coconut, and palm oils; the animal fats—lard, tallow, butter; and the whale and fish oils, and is an estimate in terms of oil available for consumption after deductions for seed and feed, and consumption of commodities other than fats and oils. World production of these same fats and oils in 1946 may be 17,500,000 tons—80 per cent of the pre-war level. The decline is the result of wartime blockades, enemy occupation of producing areas, and inadequate shipping. Production of the coconut and palm oils declined most, and the output of marine oils declined sharply.

FRUITS AND VEGETABLES

As during the war years, farmers in 1946 produced bountiful crops of fruits and vegetables. Aggregate production set a new record, slightly above the tonnage of 1945. Numerous individual crops set new records, including grapefruit, peaches, pears, plums, almonds, onions, lettuce, tomatoes, melons, and processing green peas. Various others were near record and well above average. The large potato crop was exceeded only by the 1943 crop. The apple crop was near average and well above the short 1945 crop.

Supplies of most fruits and vegetables available for domestic consumption in 1946 were the largest in several years. This resulted mainly from the large commercial production, increased imports of bananas, and sharp reductions in military takings. Production in farm and home gardens and orchards again was large, and canning and preserving of fruits and vegetables again was encouraged.

Demand for the 1946 crops of fruits and vegetables continued strong, and prices received by farmers for fruit averaged near those of 1945, but for potatoes and fresh vegetables, they averaged somewhat below. The combination of large crops and high prices resulted in cash incomes to farmers comparable with the high incomes of recent years.

POULTRY

Varying circumstances substantially affected the poultry industry. Supplies of all poultry products were short of demand in the early part of the fiscal year until the close of the war. Egg production was relatively high, but the shortage of meat created an extremely high civilian demand for eggs. Coupled with military demands and continued lend-lease requirements, civilian demand provided ample outlets at good prices.

War Food Orders controlled the marketing of chickens from commercial broiler areas and in the midwestern states. These orders were necessary to help meet military requirements. There was a record production of turkeys, yet a War Food Order was necessary to obtain turkeys to meet military needs. The situation changed quickly, however, when the war ended. Egg prices in the midwestern areas fell to low levels. Heavy production continued with questionable outlets, and the market was uncertain. This condition lasted through September 1945; thereafter egg prices increased.

MILK CONSUMPTION

The wartime increase in fluid-milk consumption continued into 1946. When the year began, numerous fluid-milk markets, particularly along the east and west coasts and in the south, had not enough milk to meet demands for fluid-milk consumption at ceiling prices. To help meet this demand, milk was being shipped from Minnesota and Wisconsin to eastern and southern points.

The shortage was attributable less to a reduction in production than to an increase in the demand, enhanced in effectiveness by the fact that prices of fluid milk were held relatively low by price ceilings accompanied by substantial dairy production payments to milk producers.

Milk production during 1946 was somewhat below the record production of over 122,000,000,000 pounds produced on farms during 1945, but it was well above the pre-war average. The number of milk cows on farms Jan. 1, 1946, was about 3 per cent below that of Jan. 1, 1945. Replacement stock was less than a year earlier—7 per cent in heifers one to two years old and 6 per cent in heifers over one year old.

WORLD SUGAR SITUATION

Twelve months after the capitulation of Germany and Japan, effects of the war were still evident in depleted sugar supplies. Beet-sugar production in Europe from the 1945 crop was only a little over half the pre-war level. Java and the Philippine Islands, the great exporters of the South Pacific, were practically out of sugar production; Formosa was producing only about 15 per cent of its pre-war output. Production in Cuba increased greatly during the war period, but the increase there was not sufficient to offset great declines in Europe and the Orient. World production of beet and cane sugar in 1945-46 was only 27,200,000 short tons (raw value), compared with a pre-war (1935-39) average of 34,500,000 tons.

With world sugar production down nearly 7,500,000 tons from the pre-war level, it was necessary to continue international programs for allocating world supplies among consuming countries, and to continue sugar consumption and price controls in the United States and other sugar importing countries. Total imports of sugar into the United States in 1946 were below the pre-war level, partly because of the lack of available supplies from the Philippines, and partly because of the necessity to share the reduced world output with other countries.

For the calendar year 1945, the limited supply of sugar available to the United States and some of its allies was divided among certain neutrals, liberated areas, the United States, United Kingdom, and Canada on the basis of a parity formula developed by the Interagency Committee on Foreign Shipments in 1945. The recommended allocations provided that the available supplies should be so divided as to provide an identical per capita consumption of cane and beet sugar for the United States, United Kingdom, and Canada. Smaller amounts were allocated to other areas on the basis mainly of their pre-war consumption.

It was not possible during 1946 to increase sugar rations as much as was anticipated just after V-J Day. The Cuban 1946 crop of 4,450,000 tons, although nearly 500,000 tons greater than the 1945 crop, was materially below early expectations, and the Puerto Rican crop yielded only 910,000 tons of sugar compared with the initial estimate of 1,100,000 tons. Rationing during the 1945-46 fiscal year, however, was more efficient than in the previous year. This country was able, while contributing to world food needs, to increase the rationing of industrial users to 60 per cent of the 1941 base by April 1, 1946 (as compared with the 50 per cent level in effect during the preceding nine months for most industrial users). Out of the total Cuban exportable surplus of 4,150,000 tons in 1946, about 2,000,000 tons were earmarked for other countries, principally the United States, Canada, France, and Holland.

FARMERS' EARNINGS

It seemed from indications in August that the net income of farm operators in 1946 might be as much as 8 per cent greater than that of 1945. Net income is what the farmers have left after deducting their expenses of production from their gross income, that is, the amount available for farm family living, savings, etc. Production expenses for 1946 ran about 11 per cent above those of 1945. Some of the items involved may be noticed.

Expenditures for purchased feed, for example, were higher, partly because feed prices had risen and partly because the farmers in the first half of the year fed their livestock more liberally. Expenditures for hired labor were greater than in the previous year, reflecting a slight increase in the number of hired workers employed at higher wage rates.

Costs or charges for farm maintenance and depreciation averaged higher, in part because farmers were able to obtain larger supplies of farm machinery and motor vehicles. Total costs of operating farm motor vehicles rose during 1946. Expenditures for fertilizer and lime also were above those of 1945, since both the amounts used and the prices had increased.

In addition, farmers in some parts of the country paid higher taxes for local government, the expenses of which had increased. On the other hand, interest payments on farm mortgages declined slightly, in line with reductions by farmers in their mortgage debt.

Because of these changes in production costs, the net income to farm operators increased slightly less than the gross farm income. Cash receipts from marketing, which constitute the greater part of the gross farm income, ran as much as 9 or 10 per cent over 1945. The same percentage gain appeared in early estimates of the 1946 value of farm products consumed in farm households, so that American farmers over-all gross farm income—from sales, home consumption, and government payments—was expected to show an increase of about 10 per cent in 1946 as compared with 1945.

In dollars the cash receipts from farm marketings ran $2,000,000,000 above last year's $20,800,000,000. Considerably more of the increase came from marketings of crops than from marketings of livestock and livestock products.

Cash from marketings of crops exceeded those of 1945 by as much as 16 per cent, largely as a result of increased returns from wheat, feed crops, and cotton. Some increase took place in the receipts from livestock and livestock products. In this branch of agricultural marketings, meat animals and dairy products were chiefly responsible for the betterment. Government payments to farmers were slightly higher than those of 1945. In physical volume the marketings were about the same as those of 1945. A higher volume of crop marketings was offset by a smaller volume in livestock and livestock products. Volume increases were notable in wheat and vegetables, while marketings of cattle and calves, of poultry and eggs, and of tobacco decreased.

THE PRICE-CONTROL CRISIS

The price-control legislation, under which the wartime price stabilization program operated, extended only to June 30, 1946. It was evident inflationary pressures would not subside by that time. Accordingly, the President early in 1946 requested Congress to extend price-control legislation and also the authorization to pay subsidies for a full year beyond June 30. Congress, however was not willing to do so without substantial amendments. An amended bill was not agreed upon by the respective branches of the Congress until late June. A drastically revised price-control bill was then sent to the President who returned it with a veto message which again urged the continuation of effective price-stabilization legislation for a full year.

The bill, stated the veto message, continued the Government's responsibility to stabilize the economy but destroyed the Government's power to do so. The message objected especially to a provision which made it mandatory in establishing price ceilings for manufactured articles to allow the same profit per unit of sale which the industry had received for the particular product in 1941. Inflationary consequences would have resulted from such a requirement because 1941 was a year of abnormally high unit profits for most manufacturers and because in the year ahead output in most lines could be expected to exceed that of 1941.

After receiving the President's veto message the Congress took no further action by July 1. Consequently, on that date the country was without price-control legislation. The President asked all groups to keep prices in line pending clarification of the price-control issue.

The response was mixed. In general, prices of food products on which subsidies had formerly been paid moved upward. During the first two weeks of July the Bureau of Labor Statistics weekly index of wholesale prices advanced 7 per cent. Food rose 18 per cent and farm interest and taxes, advanced to 199 on July 15—11 points over a month earlier. The index of prices received by farmers advanced 12 per cent from 218 on June 15 (1909-13 = 100) to 244 on July 15. In July this index was nine points higher than the previous record established in May 1920. Prices received by farmers averaged 123 per cent of parity, equal to the previous all-time high established in April 1943.

Action proceeded in Congress with a revised bill, and on July 25 Congress passed and the President approved the Price Control Extension Act of 1946. The President indicated that, though the measure provided no absolute assurance that inflation could be avoided, it offered a sufficient prospect of success to warrant wholehearted effort. Price ceilings were restored under the amended Price Control Act at June 30 levels, except in the case of certain exempt items.

On Oct. 15, 1946, the Secretary of Agriculture approved an order submitted by the Price Administrator which removed price ceilings from all livestock and all food or feed products processed or manufactured in whole or in part from livestock. This decontrol action followed conferences with the President. The announcement stated that liberal marketings of cattle for slaughter were necessary to prevent over grazing, and yet could not happen while there was considerable agitation for the removal of price ceilings.

TRANSACTIONS BY COMMODITY CREDIT CORPORATION

Total purchases made by the Commodity Credit Corporation during the fiscal year 1946 amounted to $2,100,000,000. Sales during this period amounted to $3,000,000,000. These figures compare with purchases of $2,600,000,000 and sales of $3,100,000,000 in the 1945 fiscal year. Collateral acquired from producers in satisfaction of loans amounted to $64,000,000 in the fiscal year 1946, compared with $205,000,000 in the preceding fiscal year. Before valuation reserves are taken into account, the book value of commodities owned by the Corporation on June 30, 1946, was $651,000,000. This amount is $541,000,000 less than the comparable book value of inventory held on June 30, 1945.

During the fiscal year the net loss of the Corporation was $830,400,000 or $4,400,000 less than during the prior 12-month period. The total cost of subsidy programs was $845,000,000 an increase of $102,000,000 over the previous year. The principal offset to losses incurred during the year was a profit on sales of cotton amounting to $91,500,000. Not included in the subsidy losses mentioned above is a loss of $32,000,000 representing the cost of the export differential absorbed by the Commodity Credit Corporation under the cotton and wheat export program.

SCHOOL LUNCHES

The National School Lunch Act. approved June 4, 1946, established a permanent basis for a program which the Department of Agriculture has administered since August 1935. Participation in the school-lunch program during the school year 1946-47 will probably include some 8,600,000 children in 48,000 schools. School lunches in the 1945-46 school year benefited 7,000,000 children in 44,000 schools.

The new act authorized appropriations to the Department of Agriculture to assist states in "the establishment, maintenance, operation, and expansion of nonprofit school lunch programs." The money will be given as grant-in-aid to states to reimburse schools for food and equipment purchases.

Funds authorized for equipment are limited to $10,000,000 annually; funds for school-lunch food, however. will vary from year to year with requirements. Apportionment among the states will be in line with numbers of school children between 5 to 17 and with per capita state incomes

Federal funds, if accepted, must be matched, dollar for dollar, by state funds until 1951. Thereafter, until 1955, the state contribution must be increased to $1.50 for every Federal dollar. After 1955 the state must provide three times the Federal contribution. In a state whose per capita income is less than the average for the United States, however, the matching required for a fiscal year may be decreased by the percentage of difference between the state's per capita income and that for the United States.

Assistance may be given to nonprofit private schools that meet eligibility requirements, as well as to public schools. In most cases, Federal funds for both types of school will flow through state educational agencies. In states not legally authorized to disburse contributions to private schools, the state offices of the Production and Marketing Administration will handle the contracts.

INDUSTRIES FOR RURAL AREAS

Growth of local industries offers advantages to many rural communities. These advantages include increased employment, better incomes, and higher levels of living. Urban and rural people may share the benefits, which take form in expanded markets for both industrial and agricultural products. Particularly important to rural people is the chance such growth provides for farm youth not needed on the farm to get nearby nonfarm jobs.

Necessarily, the industrial opportunity varies greatly among states and regions, in line with comparative advantages; some regional specialization develops naturally in industry, just as it does in farming. Frequently, however, opportunities for local industrial growth remain undeveloped, with bad effects on the local economic balance. It is a general rule that states and regions which have little industry to complement their agriculture have comparatively low average per capita incomes. As the degree of industrialization rises, the income level rises also.

The Department of Agriculture recently compared income figures for 12 scattered, random-selected rural counties of relatively high industrialization with the corresponding figures for neighboring predominantly agricultural counties. In the most industrialized counties the trade and income figures for 1939 indicated that the per capita income averaged $304. The corresponding figure for the farming counties was only $187. Annual retail sales averaged $312 in the industrialized counties and $233 in the farming counties. Farm home values, a good index of farm prosperity, averaged $1,511 in the industrialized counties and $1,231 in the predominantly farming counties.

FARM PRODUCTION

Major contributions to the largest aggregate volume of crops ever produced, on the basis of preliminary estimates, were made in 1946 by record crops of corn, wheat, potatoes, tobacco, peaches, pears, plums, citrus fruits and truck crops; near-record crops of oats, rice, peanuts, grapes, cherries, and sugarcane; and average or better crops of hay, flaxseed, sorghum grain, soybeans, buckwheat, sweet potatoes, dry beans, apples, prunes, apricots, hops, and sugar beets. Production of broomcorn, dry beans, pecans, and particularly rye and cotton were below average.

Farmers harvested their third successive wheat crop of over 1,000,000,000 bushels and their second successive 1,500,000,000-bushel oats crop. The fifth successive corn crop of over 3,000,000,000 bushels was in prospect, with the aid of mostly favorable planting and growing conditions. About 67.5 per cent of the acreage was planted with the higher yielding hybrids, with seven-eighths of the hybrid acreage in the high-yielding Corn Belt. The first tobacco crop in excess of 2,000,000,000 pounds appeared certain.

Even as the citrus crop from the 1945 bloom exceeded any previous crop, that from the 1946 bloom promised to top the previous year. Production of deciduous crops was large although the apple crop was a little below average. Production of commercial truck crops for the fresh market set new records of more than 9,000,000 tons from over 2,000,000 acres. The second largest supply of processing vegetables in history was available. The cotton crop of less than 9,000,000 bales was one of the smallest in the century, owing to both a small acreage and a low yield per acre.

Total food-grain production was over 37,000,000 tons, 1,000,000 tons more than in 1945, when the previous high mark was set. Total feed-grain production of 128,000,000 tons was 4 per cent larger than in 1942, the previous record year. With a larger than average hay supply and a larger tonnage of other roughages, feed supplies were abundant. This was true, despite the relatively small carry-over stocks of feed grains. Since the number of livestock and poultry on farms had decreased during 1946, the supply of feed grains per animal unit was the largest in the 21 years of record.

Livestock and livestock products were produced in an aggregate quantity about 6 per cent below that of 1944 and 1945, and 10 per cent below the high mark of 1943. In each of the categories—meat animals, wool, mohair, dairy and poultry products—production was less than in 1945. It was estimated that nearly 43,000,000,000 pounds liveweight of cattle, hogs, sheep, and poultry would be produced in 1946, about 2,000,000,000 pounds less than in 1945 and 8,000,000,000 pounds less than in 1943. However, this would be more than in any year prior to 1942.

COTTON, GRAIN, AND OTHER FIELD CROPS

By Paul L. Koenig
Vice Chairman, Crop Reporting Board, Department of Agriculture

---

GENERAL

The total crop output in 1946 was the greatest in the history of this country. High yields which resulted from the favorable growing season were a major factor in this achievement, although the harvested acreage was fairly large. The aggregate volume of all crops was 26 per cent above the 1923-32 (pre-drought) averages, 2 per cent more than the previous record production in 1942, and seven points above the 1945 total. The total acreage of 52 crops harvested in 1946 was 345,800,000 acres, less than in any of the preceding three years.

Production of the eight food and feed grains was the largest of record, amounting to 162,503,000 tons. The previous record total was 155,017,000 tons produced in 1942. Corn, wheat, and rice established new production records in 1946, whereas oats contributed the second consecutive crop exceeding 1,500,000,000 bushels. The four food grains—wheat, rye, rice, and buckwheat—totaled 36,974,000 tons. The four feed grains—corn, oats, barley, and sorghum grain—totaled 125,529,000 tons. The total of each group exceeds that of any previous year. Expressed in bushels, the food grains totaled 1,253,025,000 bushels, 4 per cent more than in 1945, and 32 per cent above the 10-year (1935-44) average. Feed grains totaled 5,167,881,000 bushels, 8 per cent more than in 1945 and 26 per cent above average.

Production of hay, which is exceeded in dollar value only by corn and wheat, was 7 per cent below the large 1945 crop, but 10 per cent above average. The 196,725,000 bushels of soybeans harvested for beans set a new production record for that crop.

COTTON ACREAGE

The 18,179,000 acres of cotton in cultivation on July 1, 1946 was 617,000 acres or 3.5 per cent more than the acreage planted in 1945. This was the first upturn in acreage since 1942. Some increase occurred in all major cotton states except South Carolina, Georgia, and Oklahoma. More than half of the net upturn, however, was in Texas, with Alabama, Mississippi, and Arkansas accounting for the major portion of the additional increase.

A persistent downward trend in cotton acreage has prevailed since the mid-twenties, dropping from a peak of 45,968,000 acres in 1925 to a low of 17,562,000 acres in 1945. With only a slight increase in the 1946 plantings, the acreage remained at a very low level and was nearly 7,500,000 acres less than the 10-year average and at a level about equal to that planted in the middle 1880's.

At planting time the price of middling spot cotton was around 27 cents per pound, the highest since 1924. With the general belief prevalent that labor would be somewhat more plentiful than during the war, the cotton trade anticipated a considerably larger acreage in 1946 than was actually planted. The increase was limited mostly by (1) unfavorable weather during the planting period, (2) a scarcity of viable seed, (3) a shortage of labor, and (4) the general uncertainty with respect to the availability of machinery, repair parts, and fertilizer. In addition to these deterrents, farmers, especially in the central Belt, had to plow under in the spring of 1946 a record proportion of the 1945 crop which could not be harvested because of unfavorable weather and a shortage of harvest hands. There was very little incentive in plowing under what should have been the previous year's profit and then planting the same crop again. During the spring of 1946, it was quite common for delta cotton farmers to have a crew of hands picking, tractors turning under unharvested cotton, and planting equipment in operation in different portions of the same field.

In Texas the planting season was one of extremes. Central and eastern Texas were much too wet and some loss of acreage resulted from washing and floods. In northwest Texas, extreme drought prevailed throughout the normal planting season, with only partial relief in late June, and farmers there were prevented from planting their full intended acreage for the second consecutive season. In Arkansas and Oklahoma, excessive rains limited planting. In many other areas of the Belt, wet soils resulted in extensive replanting which exhausted the small supply of viable planting seed and held the acreage in check.

Abandonment of acreage in cultivation on July 1, 1946 amounted to 3 per cent, leaving 17,639,000 acres for harvest as compared with 17,059,000 acres in 1945. Abandonment was above average for the second consecutive year. Weather and severe weevil damage caused heavy abandonment of acreage in Mississippi and Louisiana and above-average abandonment in Texas, Oklahoma, Missouri, and Alabama. In other states, abandonment was mostly below average.

American-Egyptian cotton in cultivation on July 1, 1946 was estimated at 2,800 acres, less than half of the 1945 acreage and only 1.5 per cent of the peak of 193,000 acres grown in 1942. This drastic reduction was owing largely to the fact that premiums for American-Egyptian cotton have placed the production of this type of cotton at a disadvantage relative to the American upland varieties. Production of American-Egyptian cotton is more expensive and hazardous than is production of upland cotton. It is difficult to pick and yields less per acre.

COTTON YIELD

The 1946 lint yield of 230.7 pounds per harvested acre was lower than any year since 1936. It was 23 pounds less than the preceding year's yield and 13 pounds below the 1935-44 average but more than 50 pounds above the average for the 10-year period (1925-34). Yields in Mississippi and Louisiana were very poor, the Louisiana yield being only two pounds more than that of 1941 which was the smallest since 1923. On the other hand, the New Mexico yield of 584 pounds was larger by eight pounds than the previous record high of 1940. The Arkansas yield has been exceeded only once while that for South Carolina is the third highest on record.

COTTON PRODUCTION AND VALUE

Production of cotton in 1946 of 8,482,000 bales of 500 pounds gross weight was 533,000 bales, or 5.9 per cent less than the small crop of 1945, and about one-third smaller than the 1935-44 average. It was only 537,000 bales larger than the 1921 crop, and with this exception was the smallest crop since 1895. The 10-year average production was exceeded in two states; *i.e.*, California which was only 5,000 bales higher and New Mexico which produced a crop second in size to the bumper crop of 1937. About half of the states produced more cotton than in 1945 but the decreases in the remaining states more than offset the increases. Decreases in Mississippi and Louisiana were equal to about one-third of the 1945 production in those states.

The small crop was the result primarily of low level of acreage and unfavorable weather during the growing and fruiting seasons. Excessive rain and relatively low temperature stepped up the boll-weevil population, and damage was considerably above average, especially in Mississippi and Louisiana. Drought caused some damage in Oklahoma and Texas. Weather during the harvest season was mostly favorable except in Texas. In that state, October rains delayed harvest and caused some field losses. Although the crop was late in some areas, the percentage ginned to Dec. 1 was estimated at 88.5 per cent as compared with 83.8 per cent to this date a year ago and the 10-year average of 92.1 per cent.

Though the 1946 crop was much

COTTON ACREAGE, YIELD, AND PRODUCTION

State	Acreage of Cotton in Cultivation July 1			Acreage Harvested			Lint Yield Per Harvested Acre			Production (Ginnings)[1] 500 lb. Gross Wt. Bales		
	Average 1935–44	1945	1946 (Prel.)	Average 1935–44	1945	1946 (Prel.)	Average 1935–44	1945	1946 (Prel.)	Average 1935–44	1945 Crop	1946 Crop (Prel.)
	Thousand Acres			Thousand Acres			Pounds			Thousand Bales		
Missouri	409	268	313	404	260	305	433	331	478	365	180	305
Virginia	42	19	20	41	19	20	319	397	384	27	16	16
North Carolina	879	566	578	865	555	570	341	369	353	612	428	420
South Carolina	1,287	960	927	1,267	954	925	294	334	360	773	664	695
Georgia	1,974	1,260	1,232	1,944	1,250	1,225	236	257	218	956	669	555
Florida	72	20	20	69	20	20	157	203	122	22	8	5
Tennessee	751	605	615	741	590	610	334	379	401	514	466	510
Alabama	2,004	1,390	1,540	1,976	1,379	1,520	249	324	253	1,016	931	800
Mississippi	2,694	2,286	2,400	2,632	2,240	2,280	320	334	219	1,757	1,560	1,040
Arkansas	2,182	1,554	1,655	2,132	1,500	1,625	311	333	366	1,375	1,042	1,240
Louisiana	1,173	819	833	1,149	804	800	274	232	150	656	387	250
Oklahoma	1,957	1,179	1,056	1,863	1,085	1,000	158	126	125	596	285	260
Texas	9,430	6,029	6,348	9,106	5,800	6,100	167	149	130	3,137	1,794	1,650
New Mexico	116	117	120	113	116	119	473	436	584	112	106	145
Arizona	216	154	145	215	154	145	420	363	473	187	117	143
California	357	319	359	352	317	358	584	535	582	430	353	435
Illinois, Kansas and Kentucky	22	17	18	21	16	17	399	268	357	18	9	13
UNITED STATES	25,567	17,562	18,179	24,890	17,059	17,639	243.8	253.6	230.7	12,553	9,015	8,482
American Egyptian[2]	73.9	6.6	2.8	72.2	6.6	2.8	243	299	387	33.6	4.1	2.2

---

[1] Allowances made for interstate movement of seed cotton for ginning.

[2] Included in state and United States totals. Grown principally in Arizona, New Mexico, and Texas.

smaller than in any recent year, the combined value of cotton and cottonseed of $1,685,103,000 was greater than for any crop since 1925, and 40 per cent higher than for the 1945 crop. This combined value is comprised of $1,438,569,000 for lint and $246,534,000 for cottonseed as computed at preliminary prices. The average price to Dec. 1, 1946 of lint of 33.9 cents per pound is 11.4 cents higher than in 1945 and is above the average received for any crop since 1919. The preliminary price of cottonseed at $71.40 per ton compares with $51.10 in 1945 and is well above the average for any of the 38 years of record. The value of cotton lint placed under government loan and unredeemed at the end of the crop marketing season is included in the above values at average prices. For the 1945 crop, 216,000 bales were placed under loan, of which about 170,000 bales had been redeemed by Aug. 1, 1946. Loans had been made on only 52,000 bales of the 1946 crop up to Dec. 1.

WHEAT

The third consecutive billion bushel wheat crop and the third consecutive record-breaking crop was harvested in 1946. Production totaled 1,155,715,000 bushels, 4 per cent more than in 1945. The spring wheat crop was larger than average but the smallest crop since 1942. The winter wheat crop, on the other hand, was the largest of record, resulting from a large acreage sown, low winter losses, remarkable recovery from the early season moisture shortage in the Great Plains, and an outstandingly good season in the Pacific Northwest.

Wheat supplies in the 1946-47 season are lower than in any of the previous five seasons, for the carry-over stocks were only about 101,000,000 bushels, smallest since the drought years. The supply, however, is still one-fourth larger than the 10-year pre-war average. In the 1945-46 season disappearance of wheat was the largest of record. Civilian and military food uses accounted for about 495,000,000 bushels, seed 82,000,000, alcohol 21,000,000, feed 320,000,000, and exports 382,000,000 bushels. In the current season, July 1, 1946 to June 30, 1947, requirements are estimated at 510,000,000 bushels for food, 82,000,000 for seed, none for alcohol, 180,000,000 for feed, 267,000,000 for export, which would leave carry-over stocks of about 218,000,000 bushels or more, depending upon imports.

Responding to the world need for food, growers planted 71,510,000 acres to wheat, the largest acreage since 1938. Of this, 67,201,000 acres were harvested, so that only 6 per cent of the seeded acreage was not harvested for grain. This compares with 69,130,000 acres seeded for the 1945 crop, 65,120,000 acres harvested and 5.8 per cent not harvested for grain. The huge wheat crop began to move to market fairly early from the Southwest. Storage facilities were nearly empty, and railroad equipment was mostly ample to move the grain so that at first there was little difficulty in handling the crop. As harvest progressed northward, however, transportation facilities became a limiting factor and quantities of grain had to be stored temporarily on the ground.

The leading states in all-wheat production in 1946 rank as follows: Kansas, North Dakota, Nebraska, Oklahoma, Washington, Texas, Montana, South Dakota, Ohio, and Colorado. These 10 states account for more than three-fourths of the total.

Wheat ranks second in value among United States crops. Valued at $2,134,019,000, the 1946 crop far exceeds in value the 1945 crop at $1,661,649,000. Value is computed at the preliminary season average price of $1.85 per bushel for the 1946 crop and at $1.50 for the 1945 crop. These season average prices are prices received by farmers for the portion of the wheat crop sold, usually 75 to 85 per cent of the total produced. Such prices are applied to the total production, to afford a measure of the relative importance of each crop in the agricultural economy.

WINTER WHEAT

The 1946 record production of 873,893,000 bushels of winter wheat cli-

GRAIN CROPS—UNITED STATES

Crop	Acreage Harvested			Yield per Harvested Acre			Production		
	Average 1935–44	1945	1946	Average 1935–44	1945	1946	Average 1935–44	1945	1946
	Thousand Acres			Bushels			Thousand Bushels		
Wheat									
Winter	39,113	46,989	48,510	15.9	17.4	18.0	618,019	817,834	873,893
Durum	2,488	2,004	2,453	12.9	16.4	14.6	31,900	32,840	35,836
Other Spring	13,803	16,127	16,238	14.0	16.0	5.1	193,774	257,550	245,986
All Wheat	55,404	65,120	67,201	15.3	17.0	17.2	843,692	1,108,224	1,155,715
Rye	3,410	1,856	1,598	12.2	12.9	11.7	42,356	23,952	18,685
Rice	1,169	1,494	1,567	47.6	45.6	45.6	55,257	68,150	71,520
Buckwheat	424	409	390	16.8	16.2	18.2	7,138	6,644	7,105
Corn, All	91,698	88,079	88,718	28.5	32.7	37.1	2,608,499	2,880,933	3,287,927
Oats	36,711	41,933	43,648	30.7	36.6	34.6	1,129,441	1,535,676	1,509,867
Barley	12,550	10,465	10,477	22.8	25.5	25.1	289,598	266,833	263,350
Sorghum Grain	5,556	6,408	6,765	14.9	15.1	15.8	86,543	97,014	106,737
Beans, Dry[1]	1,879	1,485	1,617	873	881	977	16,408	13,083	15,797
Peas, Dry[1]	362	518	512	1,213	1,142	1,353	4,580	5,915	6,926
Soybeans for beans	5,698	10,661	9,606	18.0	18.0	20.5	103,457	192,076	196,725
Flaxseed	2,673	3,785	2,430	8.3	9.1	9.4	23,426	34,557	22,962
Hay, All[2]	70,431	77,017	74,352	1.29	1.41	1.36	91,306	108,539	100,860
Popcorn[3]	87	312	163	1,328	1,372	1,634	116,300	427,780	266,752

[1] Yield of dry beans and peas is expressed as pounds per acre and production as thousand bags of 100 pounds each, uncleaned.
[2] The unit of yield and production of hay is tons.
[3] The unit of yield and production of popcorn is pounds of ear corn.

maxes three consecutive years of bumper winter-wheat crops. The 52,206,000 acres sown in the fall of 1945 were exceeded only by seedings in the falls of 1936 and 1937. Of this, 48,510,000 acres were harvested, an acreage exceeded only in 1919 and 1938. Abandonment was only 7.1 per cent of the planted acreage, compared with 6.8 per cent in 1945 and 6.9 per cent in 1942, but otherwise lower than in any other year since 1931 The yield per harvested acre was 18 bushels as compared with 17.4 in 1945 and the average of 15.9 bushels.

Winter wheat acreage was reduced from early intentions in the eastern Corn Belt and the Southeast because of delay in harvesting 1945 crops and wet fields at seeding time. An increased acreage was seeded under generally favorable soil-moisture conditions in the main winter wheat belt of the Great Plains and the Western states. In the Pacific Northwest, a favorable soil-moisture situation resulted in a marked shift to winter wheat from spring wheat. Winterkilling was light, and wheat came out of the dormant period in good condition. Light precipitation in the western Great Plains area, together with depletion of soil moisture by early spring growth, caused sharp deterioration of the crop in Texas, Oklahoma Kansas, and Nebraska before rains came in late May. Conditions from mid-May to harvest were favorable for developing and maturing the crop, so that, though a considerable acreage had headed short, the heads filled well with grain of high-test weight Harvest was completed a week or more earlier than usual.

More than three-fifths of the total winter wheat was planted and harvested in Kansas, Oklahoma, Texas, and Nebraska. Kansas alone accounted for more than one-fourth of the total acreage and nearly one-fourth of the total production. The 12 leading states in winter wheat production ranked as follows in 1946: Kansas, Nebraska, Oklahoma, Washington, Texas, Ohio, Colorado, Montana, Indiana, Michigan, Idaho, Oregon, ranging from 217,000,000 down to 20,000,000 bushels.

SPRING WHEAT

Production of 281,822,000 bushels of spring wheat in 1946, the smallest since 1942, includes 35,836,000 bushels of durum and 245,986,000 bushels of other spring wheat. Durum wheat was harvested from 2,453,000 acres, an increase of 22 per cent over the 1945 acreage. A large part of this acreage was in an area that was too dry during the early part of the growing season, but the crop rallied well when needed moisture fell. The yield of 14.6 bushels per acre was 1.8 bushels below that of 1945, but 1.7 bushels above average. Other spring wheat acreage was less severely affected by the dry spring, as it is more widely dispersed than the durum acreage. The yield of 15.1 bushels was 0.9 bushel below that of 1945, but 1.1 bushels above average. Even though the acreage was slightly larger than that of 1945, production was lower than in 1945, but considerably above average. The harvesting season was mostly favorable, so that harvesting loss was at a minimum, and the grain was of high quality.

RYE

Rye production in 1946, at 18,685,000 bushels, reached the lowest point since 1875, with the exception of the drought year 1934. It was less than half of the 1935-44 average. Both the acreage harvested and the yield per acre were relatively low. Freezing weather during May and dry weather during most of June adversely affected development of heads in some areas, especially in Nebraska, North Dakota, and South Dakota.

Of the 3.390.000 acres sown in the fall of 1946, about 47 per cent, or 1,598,000 acres, was harvested for grain. In 1945, about 45 per cent, or 1,856,000 acres, was harvested for grain. A considerable acreage is ordinarily sown for pasture, for hay, and for soil-conserving purposes. With relatively small acreage and production in North Dakota, South Dakota, and Minnesota, formerly leaders in rye production, Nebraska retained the position attained in 1945 as the leading rye-producing state. At the preliminary season average price of $1.90 per bushel, the value of 1946 production was $35,421,000, exceeding the much larger crop of 1945 valued at $1.35 per bushel and a total of $32,380,000.

Rye stocks in all positions on July 1, 1946 were only 2,387,000 bushels, an extremely low level. These, with the new crop, provide a supply for the 1946-47 season of only 21,072,000 bushels, slightly more than half the supply for the 1945-46 crop year and the smallest in 65 years. With such small supplies, all domestic uses other than seed will be greatly curtailed and exports kept very small, despite demand from abroad for food. Last year about 6,700,000 bushels of rye were used for food, 11,600,000 bushels for feed, 4,900,000 for seed, 8,300,000 for alcohol and spirits, and 7,200,000 bushels exported. A 5 per cent increase in seedings in the fall of 1946, for 1947 harvest, with large increases in states which harvest a large percentage for grain, marks the first time in four years that the acreage has been increased over the previous year.

RICE

Rice production continues to expand, with that of 1946 setting a new record of 71,520,000 bushels. This is 5 per cent more than in 1945 and 29 per cent above average. This increased production resulted entirely from the largest acreage ever harvested, as the average yield per acre was the same as a year ago and two bushels below average.

Plantings in 1946 reached the record total of 1,584,000 acres, despite extremely unfavorable weather throughout the rice area of the South. Of this, 1,567,000 acres were harvested, with an average yield of 45.6 bushels. The southern area produced 54,792,000 bushels in 1946, slightly more than in 1945, even though spring rains hindered seeding operations and much of the acreage was later than usual Though the growing season was generally favorable, some of these late plantings failed to overcome this handicap, resulting in below-average yields. The early part of the harvest season was favorable, and this, coupled with increased use of combines, resulted in completing harvest earlier than usual. California produced 16,728,000 bushels, by far its largest crop. Fall weather was nearly ideal for harvest, so that the work proceeded rapidly and with negligible loss. Yields averaged 7.5 bushels per acre more than in 1945. At the preliminary season-average price of $2.14 per bushel, the 1946 crop is valued at $153,257,000, compared with $1.79 and $122,190,000 in 1945.

BUCKWHEAT

A crop of 7,105,000 bushels of buckwheat, only slightly below average and 7 per cent larger than in 1945, was harvested in 1946. The planted acreage was the smallest since 1942, as the season was favorable for planting other grains, holding down the seeding of buckwheat, which is used as a catch-crop in many areas. Abandonment was about average, with acreage losses heaviest in New York, Pennsylvania, Michigan, and Minnesota. Of the 415,000 acres seeded, 390,000 were harvested, compared with an average of 424,000 acres harvested. Yields averaged 18.2 bushels per acre as the result of a favorable season, two bushels more than in 1945 and 1.4 bushels above average. At the preliminary season-average price of $1.46 per bushel, the value of the 1946 buckwheat crop is $10,395,000, well above the $1.19 per bushel and total of $7,875,000 for the 1945 production.

FEED GRAINS

The largest tonnage in history of the four feed grains—corn, oats, barley, and sorghum grain—was produced in 1946. The total of 125,529,000 tons exceeds by about 2½ per cent the previous record of 122,566,000 tons produced in 1942 and by 10 per cent the 1945 total. It is about a quarter larger than the average for the predrought period, despite the larger acreages of those earlier years. Contributing the major part to this tonnage was the largest corn crop ever produced, along with the second largest oats crop, an above-average crop of sorghum grain, but a smaller than average crop of barley.

Commercial users of feed grains require only a relatively small proportion of total production. The quantity of corn used on farms where grown may be three to four times as large as the quantity sold from the farms, and even then much of that sold goes to other farmers and livestock feeders. Thus by far the greater proportion of the total feed-grain supply is fed on farms. Farmers derive the greater part of their income from their feed-grain production by way of the livestock to which they feed these grains, in their sales of dairy and poultry products, meat animals, wool, and other byproducts. Current production, plus the relatively small carry-over of all grains except oats, assures the most liberal supply in history of feed grains per animal unit. The 1946 production was generally of such excellent quality that it will be much more efficient in feeding value than the supply of the preceding season when much of the corn was "soft."

Carry-over stocks of corn on Oct. 1, 1946 were by far the lowest in the four years for which such information is available. Stocks of oats were by far the largest for any July 1 of record, more than offsetting the very light stocks of barley. The large supply of feed grains (production plus carry-over) will undoubtedly reduce the quantities of wheat and rye fed this season.

CORN

The nation's largest corn crop and one of the best from the standpoint of quality resulted from the favorable 1946 season. The total of 3,287,927,000 bushels was harvested from 88,718,000 acres, at a record yield of 37.1 bushels per acre. This total exceeds the previous high mark set in 1944 by about 85,000,000 bushels and is more than one-fourth larger than the average crop. More than the usual proportion, 2,989,887,000 bushels, or 91 per cent of all corn, was harvested as grain, the remainder being the allowance for corn utilized as silage and fodder or hogged and grazed.

In only five of the last 50 years, 1898, 1939, 1940, 1941, and 1945, has the harvested acreage of corn been smaller than in 1946. The 90,027,000 acres planted was also relatively small, and abandonment at 1.5 per cent was relatively low, but the average yield per acre was nearly two bushels above the previous high point of 1942 and 8.6 bushels above average. Hybrids, planted on 67.5 per cent of the total acreage and on 91 per cent of the high-yielding Corn Belt acreage, were a major factor influencing the higher yields. The long and favorable growing season resulted in excellent quality and steadily improving yield prospects.

Overcoming most of the early obstacles by July 1, the corn crop gave promise of breaking all production records. Planting had been delayed by frequent rains during the latter part of May in the Ohio River Valley and most of the country outside the main Corn Belt. In most of the Corn Belt, especially in the western part, planting conditions were nearly ideal, although the excellent conditions for seeding spring grains and the light abandonment of winter wheat had left a smaller acreage available for corn than farmers had originally planned. Favorable weather in late June and most of July improved prospects, but dry weather in late July and August affected yield prospects in the Great Plains, the northern Lake States and scattered parts of the West. By Oct. 1, it was apparent that the crop would be of excellent quality, as September growing conditions were mostly favorable and frosts had done but little damage. Yields per acre were above average in all states except Maine, Michigan, Louisiana, Montana, Idaho, and California. New production records were set in Iowa, Illinois, Indiana, and North Carolina, with numerous other states at near-record levels.

Corn continues to be the leading crop of this country. Measuring the value of all corn by the price received by farmers for the quantity they sold, the value of 1946 production was $4,462,512,000 at the season-average price of $1.36 per bushel. In 1945, the crop was worth $3,670,557,000 at $1.27 per bushel.

Stocks of corn in all positions Oct. 1, 1946 were about 178,000,000 bushels, which, with the new production of grain corn, adds to a supply of about 3,168,000,000 bushels. A year earlier stocks were about 325,000,000 bushels and the supply 2,919,000,000 bushels. On Oct. 1, 1944, stocks were 235,000,000 bushels and the total supply 3,116,000,000 bushels of grain corn.

OATS

The second consecutive 1,500,000,000-bushel oats crop was harvested in 1946. The production of 1,509,867,000 bushels is only about 26,000,000 bushels or 1.7 per cent below the record 1945 crop. It was harvested from 43,648,000 acres, with an average yield of 34.6 bushels per acre. The acreage was 4 per cent more than in 1945 and nearly one-fifth above average, but the yield was about two bushels below that of 1945, though far above average.

An early spring season was favorable for seeding increased acreages in north Central States where three-fourths of the acreage is located in north Atlantic States. The tight feed situation, upward trends in yields in recent years, and relatively light labor requirements for producing oats were other factors in the increase, but in the South, where oats are mostly fall-sown, the wet fall of 1945 was unfavorable for seeding. The growing season was highly favorable for oats generally, and harvesting losses were light. Relatively good yields and test weights resulted, although disease appearing in some of the new high-yielding varieties tended to limit yields. Abandonment, including diversion to uses other than as grain, was only 7.2 per cent of the planted acreage, compared with 8.6 per cent in 1945.

The 1946 oats crop has a value of $1,195,011,000 at the preliminary season average price of 79.1 cents per bushel. The 1945 crop, at 66.7 cents per bushel, was valued at $1,024,799,000. Oats thus rank fifth in value among the 1946 crops.

Carry-over stocks of oats on July 1, 1946 amounted to about 295,000,000 bushels, which, added to the new crop, makes the supply for the 1946-47 season about 1,805,000,000 bushels. Supplies for the 1945-46 season amounted to about 1,772,000,000 bushels, including about 236,000,000 bushels of carry-over stocks. In no other year had supplies ever reached such high levels.

BARLEY

Production of barley declined in 1946 for the fourth consecutive year, to 263,350,000 bushels. This is only 1 per cent below the 1945 crop, but 9 per cent below average. The downward trend in barley acreage, which began after the 1942 peak, largely accounts for the recent small crops. The yield of 25.1 bushels per acre was satisfactory, only slightly below 1945, but 2.3 bushels above average.

The 11,594,000 acres planted to barley in 1946 was only three-fifths of that planted in the first year of the war. Of this, 10,477,000 acres were harvested. In some of the major producing states, however, the downward trend in acreage was reversed this season. The north Central States, which grow well over half of the barley acreage, harvested 5 per cent more acres than in 1945. The north Atlantic States harvested 9 per cent more acres than in 1945, but in most other parts of the country, particularly the South and with Montana excepted, acreage of barley continued to decline with the increase in oats. At the preliminary season-average price of $1.34 per bushel, the 1946 barley crop is worth $353,645,000, compared with $1.02 and $271,460,000 for the 1945 crop.

Stocks of barley in all positions on July 1, 1946 were less than 59,000,000 bushels, which, with the new crop, made the supply for the 1946-47 season about 322,000,000 bushels. A year earlier the stocks were 96,000,000 bushels and the supply 363,000,000 bushels, while on July 1, 1944 the supply was 354,000,000 bushels, and on July 1, 1943 it was 445,000,000 bushels.

SORGHUM GRAIN

About 106,737,000 bushels of sorghum grain were produced in 1946, 10 per cent more than in 1945 and substantially above average. This total is not greatly different from the fairly large crops of 1941, 1942, and 1943, but is 41 per cent below the record crop of 1944.

Sorghums were planted later than usual because of unfavorable moisture conditions during the usual planting season. Growth was retarded by drought conditions and high temperatures during July and August, until rains in late August and early September brought significant improvement. Favorable fall growing conditions and later than usual frosts permitted grain to mature on much of the late planted acreage, which otherwise would have produced only forage. The 6,765,000 acres harvested for grain were 6 per cent more than in 1945 and constituted 49 per cent of the acreage harvested for all purposes, compared with 43 per cent in 1945.

Sorghum grain production is heavily concentrated in the southern and central Great Plains states, with Texas producing in 1946 about 69 per cent of the total, Kansas 11 per cent, and Oklahoma 7 per cent. In addition to the grain, about 8,619,000 tons of forage and 3,701,000 tons of silage were produced on the acreage not harvested for grain. About 13,838,000 acres of sorghum were harvested for all purposes, including grain, silage, forage, and 179,000 acres for syrup.

Using the preliminary season average price received by farmers to evaluate the crop, the 1946 production of sorghum grain at $1.39 per bushel is worth $148,239,000, compared with $1.19 and $115,816,000 in 1945.

HAY

The importance of hay among the country's field crops may be gauged by its value, which is usually exceeded only by corn and wheat. In 1944, hay ranked second in value. The 1946 hay crop amounted to 100,860,000 tons, about 7 per cent less than in 1945. This was harvested from 74,352,000 acres. The season was favorable for hay, although May freezes in northern Great Plains states and a dry summer in the Lake states limited yields. Quality is generally good. Making up the total production were about 34,000,000 tons of clover-timothy hay, 32,000.000 of alfalfa, 12,000,000 of wild hay, 7,000,000 of lespedeza, 4,000.000 of soybean, cowpea, and peanut hay, 3,000.000 of grain hay, and 9,000,000 tons of miscellaneous hays. Hay is grown in all sections, but the kinds vary according to those best suited to the section.

At the preliminary season average price of $17.30 per ton, the 1946 hay crop is valued at $1,748,748.000, compared with $15.20 and $1,650.132,000 in 1945. The total hay supply, including carry-over from previous crops, was about 117,000,000 tons, slightly less than for the 1945-46 season but one-seventh more than average. With reduced livestock numbers the supply per animal unit is the most liberal on record.

DRY BEANS

Nearly an average crop of dry beans was produced in 1946, about 15,797,000 bags uncleaned, equivalent to about 14,750,000 bags cleaned. Although this is about 5,000,000 bags below the wartime peak of 1943, it is one-fifth more than the small crop of 1945. About 1,698,000 acres of beans were planted, the loss in acreage was relatively light, and 1,617.000 acres were harvested. The yield of 977 pounds per acre is well above average. The season was nearly ideal in New York, a very dry season in Michigan limited yields, but a late fall enabled growers to harvest beans with a minimum of loss. The season was generally good elsewhere. At $11.30 per 100-pound bag the 1946 crop of dry beans is valued at $166,100.000 compared with $6.55 and $78,348,000 in 1945.

SOYBEANS

The wartime expansion of the soybean crop continued so that in 1946 a new production record was set at 196,725,000 bushels harvested for beans. This is nearly double the average. In 1941, production was only a little over 105,500,000 bushels. The 1946 acreage harvested for beans is the smallest since 1941, but the yield of 20.5 bushels per acre was exceeded only in 1939, and is 2.5 bushels above average.

The season from planting time through harvest was favorable for soybeans. Planting was accomplished with but little delay. The growing season was dry in the area adjacent to Lakes Michigan and Erie, but was exceptionally good in most other areas. Killing frosts held off long beyond the usual date, enabling plants to reach full maturity, and harvest was completed quickly with slight losses. Beans are of high quality and low moisture content.

The 1946 soybean crop, at the preliminary season average price of $2.63 per bushel, is valued at $516,917,000. In 1945 the value was $399,698,000 at $2.08 per bushel.

Stocks of soybeans on Oct. 1, 1946 were only about 4,345,000 bushels, as processors drew heavily on the supply with the new crop large, of good quality, becoming available at an early date. This made the supply for the 1946-47 season about 201,000.000 bushels, compared with about 200,000,000 bushels, including stocks of 7,741,000 bushels, on Oct. 1, 1945. Of that supply about 159,000,000 bushels were processed for oil.

OTHER OILSEEDS

Oilseeds totaling over 11,000,000 tons were produced in 1946, only 3 per cent less than in 1945 and one-eighth more than average. Smaller than usual tonnages of cottonseed and flaxseed, but a record tonnage of soybeans and near-record crop of peanuts, make up the total. The cotton and cottonseed crop, except for that of 1921, is the smallest since 1895. Flax was harvested from only about two-thirds as large an acreage as in 1945. The dry planting season in the main flax area of the northern Great Plains and competition by wheat for use of the land reduced seedings. Yields averaged 9.4 bushels per acre, better than in 1945 and average. The peanut crop of 2,075,880,000 pounds was the fifth consecutive crop to top 2,000,000,000 pounds and is nearly double the average before 1941.

Flaxseed valued at $4.24 per bushel and total of $97,360,000 nearly equals in value the much larger 1945 crop at $2.89 per bushel and total of $99,912,000. Cottonseed at $71.40 per ton and total of $246,534,000 in 1946 is worth more than the slightly larger 1945 crop at $51.10 per ton and total of $187,155,000. Peanuts were valued at 9.32 cents per pound and total of $193,413,000 in 1946, compared with 8.27 cents and $168,878,000 in 1945. The four oilseeds, including soybeans, totaled $1,054,224,000 in value in 1946 and $855,643,000 in 1945.

SEED CROPS

Record or near-record production was achieved in 1946 for nine out of 26 kinds of seed crops—alfalfa, red clover, lespedeza, white clover, orchard grass, blue lupine, purple vetch, common ryegrass, and perennial ryegrass. Production of 14 kinds exceeded that of 1945. In the hay seed group, the large crops were particularly timely in the cases of alfalfa and red clover because these are the leading hay crops used in the northern half of the country. Acreage and poundage payments for producing seed, offered to growers by the Government, were chiefly responsible for harvesting record acreages of alfalfa and red clover. Weather conditions for harvesting the majority of seed in 1946 were more favorable than in 1945, with the result that yields were larger and quality of seed was better. Harvesting of seed crops began earlier in 1946 than in 1945, and was interrupted very little by unsettled weather. Movement of seed from farms was faster in 1946 than usual and at prices well above average.

The aggregate production in 1946 of the 26 kinds of legume, grass, and winter cover crop seeds was 761,500,000 pounds of clean seed, with a farm value of $146,500,000. This compares with 670,700,000 pounds produced in 1945, and a value of $114,100,000.

The 1946 production of alfalfa seed

SEED CROPS—UNITED STATES

Kind of Seed	Acreage Harvested			Yield per Acre			Production		
	Average 1935–44	1945	1946	Average 1935–44	1945	1946	Average 1935–44	1945	1946
		Acres			Bushels		Bushels—Thresher Run		
Alfalfa	767,190	888,500	1,070,700	1.57	1.33	1.55	1,176,150	1,182,100	1,658,400
Red clover	1,291,950	2,186,500	2,584,100	1.09	.80	.82	1,314,420	1,749,500	2,112,800
Alsike clover	141,470	153,000	149,100	2.23	2.29	2.62	304,290	350,600	390,200
Sweetclover	336,750	239,100	229,300	2.67	2.54	2.69	882,550	606,200	616,000
Timothy	491,320	362,200	378,300	3.51	3.68	3.70	1,783,130	1,333,300	1,398,000
Lespedeza[1]	718,440	922,000	974,000	193	203	220	143,169	187,000	213,900
	Average 1940–44	1945	1946	Average 1940–44	1945	1946	Average 1940–44	1945	1946
		Acres			Pounds		Thousand Pounds—Clean		
Hairy vetch	109,260	60,400	47,400	243	235	203	26,124	14,210	9,640
Common and Willamette vetch	57,790	97,000	104,000	434	528	437	25,192	51,200	45,400
Hungarian vetch	9,900	4,200	3,400	462	475	400	4,590	2,000	1,400
Purple vetch	20,320	36,100	36,700	385	300	343	7,974	10,840	12,580
Austrian Winter peas	92,840	42,000	42,500	871	905	1,259	83,590	38,000	53,500
Blue lupine	[2]6,550	15,500	35,000	[2]940	877	1,066	[2]6,100	13,600	37,300
Common ryegrass	70,200	80,000	92,000	340	450	530	27,100	39,500	52,300
Perennial ryegrass	13,240	15,000	15,000	223	300	325	3,024	4,500	4,900
Crimson clover	47,980	64,400	61,800	255	223	245	12,430	14,350	15,160
Ladino clover	6,380	16,800	13,600	65	59	66	408	990	900
White clover	18,970	20,300	22,700	83	107	127	1,608	2,170	2,880
Redtop	257,800	274,000	258,000	63	81	62	16,380	22,300	16,100
Orchard grass	44,380	44,300	50,700	132	115	153	5,858	5,096	7,770
Kentucky bluegrass	517,100	393,900	346,500	38	35	22	20,367	13,862	7,652
Crested wheatgrass	[2]112,933	44,900	25,500	[2]111	104	95	[2]12,410	4,690	2,420
Bromegrass	[2]59,600	63,800	36,500	[2]181	180	140	[2]10,837	11,490	5,110
Carpet grass	8,840	6,000	5,700	62	65	68	552	390	390
Dallis grass[3]	—	—	—	—	—	—	266	500	600
Meadow fescue	6,270	10,200	8,200	200	147	140	1,200	1,500	1,150
Sudan grass[4]	158,703	72,900	58,800	362	399	391	57,514	29,100	23,000

---

[1] Yield in pounds and production in thousand pounds.
[2] Short-time average.
[3] Acres and yield not estimated because most of production cleaned out of other crops.
[4] Sudan grass is on a thresher-run basis.

(thresher-run) was 9 per cent larger than the previous record established in 1939, 40 per cent larger than the 1945 production, and 41 per cent above the 1935-44 average. A record acreage was harvested in 1946.

Production of red clover seed in 1946 was about equal to the record of 2,113,600 bushels in 1929. Production in 12 out of 18 states was larger in 1946 than in 1945. The 1946 acreage is the largest ever harvested and twice the 10-year average of 1,291,950 acres.

An increase of 11 per cent over 1945 and 28 per cent over the average is indicated for the 1946 crop of alsike clover seed. The increase over 1945 was owing to larger yields. Production in seven of 11 states exceeded that of 1945.

A crop of sweetclover seed 2 per cent above 1945 is attributed entirely to a slightly larger yield per acre which more than offset the small reduction in acreage harvested.

Increases of 6 per cent in acreage and 8 per cent in yield per acre accounted for the 14 per cent larger production of lespedeza seed in 1946 than in 1945. With minor exceptions, production in the northern producing states was larger than in 1945, whereas the 1946 production was smaller in the southern producing states.

Production of timothy seed 5 per cent larger than in 1945 is attributed to small increases in acreage and yield. Production in five out of eight states was larger than in 1945, with increases largest in Indiana and Ohio.

Production of redtop seed in Illinois and Missouri in 1946 was 28 per cent below the 1945 production. Heavy rains just before and during harvest in Illinois decreased yields and caused some reduction in the acreage harvested for seed.

On the smallest acreage of record (since 1929), production of Sudangrass seed in 1946 fell 21 per cent below the very small crop of 1945. Smaller crops than in 1945 were harvested in six out of the eight producing states.

THE DAIRY INDUSTRY

By Herbert C. Kriesel
Bureau of Agricultural Economics, Department of Agriculture

GENERAL

The year 1946 saw the dairy industry undergo substantial adjustments toward a peacetime basis. Price controls were in effect through the first half of 1946, and some supply controls were invoked during the first six months of the year in order to fill urgent foreign relief requirements, but, by the year-end, the dairy industry had reverted almost completely to a pre-war status, as far as pricing and distributing were concerned. Dairy prices did not rise sufficiently to offset immediately the suspension of subsidies following the suspension of price controls in mid-year, but production on farms apparently was little affected by the failure of prices to advance at once.

Under the influence of favorable unit returns, including government payments and pasture conditions well above average, milk production per cow reached a new high record. This higher rate partly offset a reduction in cow numbers. Total milk output was the highest on record except for 1945. With record consumption of fluid milk and cream and ice cream through much of 1946 and with a slightly smaller total milk supply, output of other manufactured products using butterfat declined sharply from the 1945 levels. Supplies of many manufactured dairy products were considerably short of demand through the first half of 1946, but such market shortages disappeared with the suspension of price controls and the resumption of free pricing in the dairy industry.

MILK PRODUCTION

The number of milk cows in the United States has been increasing generally with the population, but the number of people has increased somewhat more rapidly. In the late 1800's the United States had one cow for every four people, but with increased output of milk per cow, demands for milk have been met in recent years with one cow for every five or more persons. Production of milk per cow has climbed, and the increase in total output of milk has been closely in line with increases in population. Since 1940, however, the increase in milk production has been greater than the population increase.

Only two previous major downturns in milk cow numbers have occurred since 1867. These reductions followed the peaks of 1925 and 1934. The reduction in 1934 was much the greater of the two previous declines and was associated with the drought of the middle 1930's. Following the low point in cow numbers in 1938, numbers increased fairly rapidly. Expanded output of milk was made possible by greater supplies of feed concentrates, improved pastures, and increased roughage supplies. Widespread soil conservation, other improved practices, and ample moisture aided in these increases. By the time the United States entered the Second World War, the number of cows on farms had almost regained the losses suffered during 1934-38. The number continued to increase until the middle or latter part of 1944, but since then, the net removal of cows from dairy herds has been at a faster rate than at any previous time. This decline occurred despite comparatively large feed supplies per unit and unit returns (prices plus subsidies) for dairy products above average in relation to feed prices, particularly in 1945. It appears that farm labor shortages and favorable returns from alternative enterprises have been more influential than usual in causing dairymen to reduce the size of their herds.

The effects on milk production of the reduction in cow numbers during 1946 as compared with 1945 was partly offset by a further increase in rate of output per cow. The 1946 average rate was around 4,875 pounds, 2 per cent above the previous record reached in 1945 and 11 per cent above the pre-war average. Some short-term factors which contributed to the high rate per cow during 1946 were: (1) in the reduction of cow numbers in the year the poorer cows were taken out of production; (2) pastures were well above average during the 1946 season; (3) liberal quantities of concentrates were fed dairy cows; (4) the proportion of milk cows actually milked averaged higher in 1946 than in 1945. There is some evidence that this proportion will increase further with the improvement in the farm labor supply. Besides the effects of the short-time influences, milk production per cow in 1946 no doubt was affected by continuation of some long-time developments. These consist of improvements in (1) methods of feeding, (2) in breeding through use of artificial insemination methods and dairy herd improvement associations, and (3) in management of dairy cows.

Total milk production in 1946 was about 119,500,000,000 pounds compared with the previous record of 122,200,000.000 pounds reached in 1945 and the 1935-39 average of 103,000,000,000 pounds.

PRICES OF DAIRY PRODUCTS

The demand for dairy products at prevailing ceiling prices exceeded available supplies by a considerable margin through June 1946. Consequently, when price ceilings lapsed at the end of June, prices of dairy products increased more sharply than at any previous time and soon more than offset the suspension of subsidy payments. The strong consumer demand for dairy products was supplemented during the third and fourth quarters of 1946 by demands from manufacturers and distributors to replenish and maintain stocks of manufactured products. Retail prices of dairy products in October were 37 per cent higher than in June 1946, 48 per cent higher than in January, and 52 per cent higher than in October 1945. Retail prices of butter, cheese, and fresh milk by the end of 1946 exceeded the highest levels reached in the period of the First World War, but prices of evaporated milk had not reached previous record levels. Prices received by farmers for dairy products in October, allowing for seasonal variation, were 9 per cent higher than unit returns (prices plus subsidies) in June and 22 per cent higher than in January. The index of prices received by farmers for all dairy items sold in 1946 averaged about 235 per cent of the 1910-14 average compared with 197 per cent in 1945 and the 1935-39 average of 119 per cent.

FARM INCOME FROM DAIRY PRODUCTS

Increases in unit returns to farmers for dairy products sold in 1946 more than offset the slight decline in volume, and cash income from dairy products increased to a new record level. Cash receipts for marketings during 1946 totaled $3,600.000,000. In addition, farmers received about $280,000,000 in production payments, making total cash receipts for 1946 nearly $3,900,000,000. This was 2¾ times the 1935-39 average cash receipt and compares with $3.600,000,000 received in 1945. The value of milk, cream, and butter consumed on farms during 1946 was around $700,000,000. Thus, gross farm income from the dairy enterprise was about $4,500,000,000 in 1946. As has been the case, every year since 1919, except 1941 and 1942, milk and milk products provided the largest single source of cash for farm receipts.

A substantial part of the increase in cash receipts from dairy products in 1946 over pre-war was accounted for by a shifting of the method of sale of milk from cream to whole milk. The latter provides cash outlet for the non-fat solids of milk and in almost all instances affords higher unit returns per unit of butterfat sold. In 1946, sales of whole milk constituted about 75 per cent of the milk equivalent of milk and cream delivered at wholesale. The 1935-39 average was only 57 per cent. In 1946 farmers received nearly $250,000,000 more for their milk and cream sold in the proportions which prevailed than they would have received if the 1935-39 ratios had continued. This increase is an average of around $50 for all dairy farms of the nation, and for the dairy farmers who actually made most of the shift it probably was equivalent to several hundred dollars per farm.

For 1946, specific price supports on dairy products were not announced as they had been in some previous years. The only support commitment in effect was that of the Steagall Amendment to the Price Stabilization Act which provides that if funds are available the price of whole milk and butterfat received by farmers shall be supported at not less than 90 per cent of parity for two years following the Jan. 1 after hostilities have been declared at an end. Unit returns for both items during 1946 exceeded parity by 25 per cent or more.

REINSTATEMENT OF WARTIME GOVERNMENT SUPPLY CONTROLS

During the war, milk was channeled to the most desired use by application of government limitation, reservation, allocation, and rationing orders. Reservation orders required the setting aside of a part of the output or stocks for sale to government agencies. Limitation orders restricted production and sales of certain products. Allocation orders required users to apply for permission to use a specified quantity of products. Rationing was a form of allocation applied to a large number of individual consumers, and for dairy products was not renewed in 1946 after being suspended in late 1945. To obtain sufficient quantities for export demand, reservation orders were reinstated during the first half of 1946 for cheese, butter, non-fat dry milk solids, and, for the first time in the war emergency, were instituted for evaporated milk. By the end of June, when price controls were suspended, adequate supplies of most dairy products had been contracted for delivery to the

Government. In July and August all allocation orders were suspended. On July 1, however, an order limiting the fat content of cream for fluid distribution was invoked, and continued in effect until Nov. 20. By the end of 1946, the dairy industry was free of all supply controls except as it was affected by sugar allocations and export-import licensing.

RECORD FLUID MILK CONSUMPTION

Price ceilings on fluid milk and cream during the war permitted consumers to increase greatly their consumption of this product without raising their expenditures much above average in relation to their incomes. Wartime controls on distributors' volume of fluid milk and on the fat content of fluid cream prevented an even more rapid increase in expeditures`for these items. Thus, with the suspension of these supply controls in September 1945, continuation of price ceilings and high consumer incomes, a further increase in consumption occurred. Per capita consumption of fluid milk and cream from mid-1945 to mid-1946 apparently was around 455 pounds per person compared with the 1935-39 average of 340 pounds.

Following the reimposition on July 1, 1946 of a government order, limiting to 19 per cent the fat content of cream for fluid distribution, and the price increases after July 1, 1946, consumption of fluid milk and cream apparently declined, but for 1946 as a whole, consumption was close to the previous record of 438 pounds reached in 1945. Total consumption of fluid milk and cream in the United States during 1946 was 60,000,000,000 pounds or approximately 52 per cent of the total production. In 1935-39 only 43 per cent of total milk production was consumed in fluid form. Ice cream consumption increased sharply after the lifting of the limitation order in September 1945, and in the first half of 1946 averaged 85 per cent greater than in the comparable period of 1945.

The high level of consumption of fluid milk, cream, and ice cream during 1946, and slightly smaller production of milk on farms, resulted in a substantial reduction in the quantity of milk available for other manufactured products containing butterfat. The whole milk equivalent (fats solids basis) of milk used in manufactured products other than ice cream in 1946 was 42,000,000,000 pounds compared with 49,000,000,000 pounds in 1945, and the 1935-39 average of 46,000,000,000 pounds.

CREAMERY BUTTER PRODUCTION

The decline in output of butter accounted for much of the reduction in total output of manufactured dairy products during 1946. Butter production declined during and since the Second World War much as it did during and after the First World War. In both instances, this reflected a less rapid increase in supply of than in demand for fluid milk and some other milk products. Production of butter, the residual claimant on available supplies of butterfat, inevitably declined. In the four years 1917-20, consumption of butter averaged 14.9 pounds per person compared with the 1910-14 average of 17.4 pounds. From 1919 to 1920, the second year following the end of the First World War, butter consumption declined a half pound per person. Beginning with the slackening of consumer demands in 1921-22, more butterfat went into butter, and in subsequent years consumption increased substantially over the 1920 level. However, from the middle 1920's to the outbreak of the Second World War, butter consumption fell off slowly. The average in 1935-39 was 16.7 pounds compared with 18.1 pounds in 1923-27 when the average was the highest for any five consecutive years on record.

Sharply increased demands for whole milk items containing butterfat resulted in decreasing butter production before price controls were established in 1942, despite increasing milk production. With the imposition of price controls on butter and other products in late 1942, and with continued strong demands for milk in other forms, butter production was reduced further, reaching a record low in 1946. In the second half of 1946, reflecting a decrease in consumption of fluid milk and cream, the annual rate of butter production increased. Output of creamery butter for 1946 totaled less than 1,150,000,000 pounds compared with 1,361,000,000 pounds in 1945 and the pre-war 1935-39 average of 1,691,000,000 pounds.

Production of American Cheddar cheese in 1946 was 1,050,000,000 pounds compared with 1,115,000,000 pounds in 1945 and the pre-war average of 669,000,000, pounds. Production of condensed and evaporated milk in 1946 was around 3,300,000,000 pounds, a decline of 23 per cent from the record high in 1945 but 50 per cent above the pre-war average. Dry whole milk production in 1946 was approximately 175,000,000 pounds, somewhat less than the record of 219,000,000 pounds in 1945, but nearly 10 times the 1935-39 average of 19,000,000 pounds. The output of non-fat dry milk solids for human consumption in 1946 about equaled the previous record of 632,000,000 pounds reached in 1945 and was more than twice the 243,000,000 pounds in 1935-39.

EXPORTS OF DAIRY PRODUCTS

The proportion of domestic production that was exported during and since the Second World War varied considerably among manufactured dairy products. The largest proportion of domestic output was exported in the case of dry milks, both non-fat dry solids and whole milk. Condensed and evaporated milk and cheese were next in importance and a very small amount of butter was exported. The total quantity of dairy products exported during 1946 was 5,600,000,000 pounds, whole milk equivalent, about 4 per cent of production, compared with the pre-war average of a little over one-third of a billion pounds. Between the two wars the United States was a net importer of dairy products, largely because of relatively heavy imports of cheese.

DOMESTIC CONSUMPTION OF TOTAL DAIRY PRODUCTS

Although total foreign shipments of dairy products during 1946 were at near record levels, purchases from current production during the year were smaller than in 1945 and some previous years, since large quantities of several items were transferred from the armed forces late in 1945 and early in 1946. Thus, civilian per capita consumption in the United States equaled or exceeded previous years for all major dairy items except butter. Per capita consumption of butter in 1946 was 10 pounds compared with 16.7 pounds in 1935-39. The decrease in consumption of butterfat in the form of butter was about offset by the increase in consumption of butterfat in fluid milk, cream, and ice cream. Consumption per person of all milk products during 1946, measured on a fats solids basis, was about equal to the 1935-39 average, but because of increased human consumption of non-fat milk solids, consumption of all milk products per person, measured on a non-fat solids basis, was nearly 30 per cent larger than the 1935-39 average.

INSECT PESTS AND PLANT QUARANTINES

By P. N. Annand

Chief, Bureau of Entomology and Plant Quarantine,
Department of Agriculture

GENERAL

The further development of new insecticidal materials and improvements in equipment and methods for their application have continued to receive major emphasis. Extensive experimentation has been carried on to determine the usefulness of new materials that show promise for the control of agricultural pests, as well as those affecting the health of man and animals and those injurious to stored products and in the home. Advancements have also been made in methods and equipment for applying insecticides and fumigants. Many of the developments resulting from research have been applied to large-scale insect control projects carried on in cooperation with state and other agencies. Some have also aided in simplifying and improving methods used in certifying materials and products that require treatment in order to move under plant quarantine regulations. The constant increase of air transportation continues to create problems in protecting the country from importations of new insect pests and plant diseases and in preventing the spread of those already established in limited areas.

INSECTICIDE DEVELOPMENTS AND METHODS OF APPLICATION

Extensive experimentation has been continued to determine practical and safe uses of various formulations containing DDT. Except against household insects and direct pests of man and animals, such as flies and mosquitoes, few definite recommendations for its use have been made. Further tests with benzene hexachloride disclose that it has shown special promise for use against cotton insects, and encouraging results against many other insects. Preliminary tests of the new insecticide designated as "1068" (a chlorinated hydrocarbon) showed it to be more toxic than DDT to some insects and less toxic to others. Chlorinated bicyclic terpene was found to equal DDT in toxicity to some household and crop insects, showing sufficient promise to warrant recommendation for field testing.

Marked progress has been made in the development of mist blowers for applying concentrated sprays from the ground. Many practical tests of the dispersion of sprays from aircraft have also been undertaken, involving the use of various types of equipment, spray formulas, and dosages against insect pests of cotton, forests, and field crops.

Cooperative work on the use of aerosols in the control of insects on vegetable crops was continued. DDT was used with various solvents and propellents. Mixtures that do not injure plants were developed for field and greenhouse use, and apparatus for applying such aerosols were tested against thrips, aphids, and leafhoppers. Methyl chloride as the propellent is being replaced by mixtures of Freon-11 and Freon-12 because of their lower toxicity to man. Work on the development of aerosol formulas and equipment for use on aircraft is in progress in cooperation with the United States Public Health Service. The use of lower pressure aerosols is also being studied.

FUMIGATION METHODS

The study of factors governing tolerance of nursery plants to methyl bromide fumigation was continued in connection with treatments for products regulated under the white-fringed beetle quarantine. A new project to develop treatments for bulk cottonseed and other products regulated by the pink bollworm quarantine was begun. Continued work on hydrocyanic acid fumigation of the California red scale on citrus confirmed previous conclusions that the gastight tent requires only about one third as much fumigant to achieve effective controls as does the standard duck tent. The design of the blower applicator developed by the Bureau of Entomology and Plant Quarantine has been modified to facilitate handling in the field.

INSECT REPELLENTS

Screening tests of more than 7,500 chemicals as mosquito repellents for skin applications were completed during the year, and eight chemicals have been found to give over five hours' protection against the bites of yellow-fever mosquitoes. These materials are now being tested for their toxicity to man before they are recommended for use. Screening tests of chemicals for use as miticides were also completed and 229 were shown to be equal or superior to benzyl benzoate in toxicity to mite larvae. Two of these materials, when impregnated in clothing, remained effective after seven to 11 washings, whereas benzyl benzoate failed after two to four washings.

SCREWWORMS

The screwworm survey, which has served well to determine the needs of critical ingredients for Smear 62 and to acquaint the livestock industry with the superiority of this remedy for the control of screwworms, was continued. With the cooperation of state personnel, Smear 62 has been introduced in all the affected states, and livestock owners have saved many valuable animals and prevented many local outbreaks and further spread of the screwworm. Research has been continued to develop substitutes for diphenylamine and turkey red oil.

OTHER LIVESTOCK PESTS

Water suspensions containing DDT were found to be more desirable than solutions and emulsions in spraying dairy barns for the control of houseflies. The suspensions, when applied to animals, have also been found effective against horn flies. DDT and benzene hexachloride have shown more promise than any materials heretofore used for the control of all species of cattle lice. Both materials appear to be capable of eradicating cattle lice with one treatment, which has not been possible with the older remedies. Preliminary tests show that fleeces of animals dipped in DDT preparations for louse and tick control and sheared a few days later are rendered moth-proof. Fleeces sheared from animals dipped in solutions containing DDT were still as moth resistant in the spring of 1946 as when they were first tested after shearing in 1944.

CODLING MOTH

DDT has continued to give outstanding control of the codling moth wherever tested. A 50-per cent wettable powder containing DDT appears to be the most practical spray formulation for this purpose. Used with oil, DDT in excess of six ounces per 100 gallons in six applications during the season usually resulted in residues greater than the tolerance of 7 p.p.m. Evidence shows that outbreaks of red spiders and other mites result from the use of DDT because of its high toxicity to their predators. This group of problems is now receiving special attention. Because of the mite problem, and uncertainties about the status of residues, DDT has not been given unqualified recommendation for codling moth control despite its effectiveness. In small-scale laboratory tests at Beltsville, Md., benzene hexachloride showed promise for control of the insect, but in field tests at Vincennes, Ind., it was less effective than DDT.

ORIENTAL FRUIT MOTH

In tests in Ohio one application of DDT to peach trees 20 days before harvest effected a significant reduction in late-season injury by this insect, and the residues at harvest time were well under 7 p.p.m. Unfortunately, DDT is highly toxic to the important parasite of this moth, *Macrocentrus ancylivorus* Roh. Propagation of this parasite on the potato tuber worm continued to be highly successful although the breeding rate fell below expectations in the spring of 1946, owing to adverse weather conditions.

JAPANESE BEETLE

The program for distributing the milky disease of Japanese beetle grubs was continued in cooperation with state agencies in nine states and the Army Service Forces in the First, Second, and Third Service Commands. Spores of the milky disease organism, stored in dried-blood smears on glass slides, have now remained alive and effective for 10 years and the standard spore dust mixture has lost little or none of its infectiousness after storage for 6½ years. A cooperative nationwide precautionary Japanese beetle trapping program was inaugurated at 107 airports in 28 states outside the infested area to check on the possible accidental spread of adult beetles by plane. From one to three beetles were caught in traps at airports of six of the localities. Authority was granted on March 21, 1946 for the use of DDT for treating soil in nursery plots and potting soil as a means of obtaining certification for movement under Japanese beetle quarantine regulations of plants grown in such soil. Ethylene dibromide has been found generally to be much more effective than ethylene dichloride in various formulations as dips for eggs, larvae, and pupae of the Japanese beetle in soil masses and plant balls, and for surface applications to soil plots containing larvae and pupae. However, more information on plant tolerance is needed before this material can be generally recommended for quarantine treatments. Ethylene dibromide also showed promise as a fumigant for adult beetles.

WHITE-FRINGED BEETLE

By the end of 1945 this insect was known to occur on a total of 153,000 acres in Alabama, Florida, Louisiana, Mississippi, and North Carolina. During 1946, white-fringed beetle infestations were found in 41 Georgia counties, mainly across the central part of the state and at a small heel yard at Columbia, S. C. Most of these infestations were traced through shipments of nursery stock from Fort Valley and Macon, Ga. Nursery shipping record examination for the past decade revealed shipments to 26 states. Inspection of the planting sites of these shipments failed to reveal infestation in any additional states. Quarantine and control measures designed to prevent further spread from infested states included supervision of more than 260,000 shipments of nursery, farm, mill, and timber products, also soil, implements, and numerous other materials. Equipment has been devised to increase the efficiency and reduce costs of insecticide applications at critical points to keep down beetle populations and so also reduce the spread hazard. Treatment of soil with DDT has shown promise of becoming a practical means of controlling this insect. In preliminary tests, benzene hexachloride has been very effective against eggs, larvae, and adults of this pest.

EUROPEAN CORN BORER

This insect spread into relatively little new territory in 1945. However, populations were higher than during 1944 over the greater portion of the Corn Belt and losses due to the borer totaled about $37,000,000 in 1945. Experiments showed that this insect can be controlled with from two to four applications of DDT sprays or dusts, distributed with either ground or airplane equipment. It is possible that insecticidal control of the borer on canning and field corn may thus become practical.

GRASSHOPPERS

Weather during the early spring of 1946 was favorable to early hatching and rapid development. In May, however, unfavorable weather retarded hatching and development over the northern Great Plains. Infestations increased rapidly in June. Cooperative control operations were conducted in 23 central, midwestern, and western states, affording protection to 5,580,000 acres of crops worth more than $29,550,000. Specifications are now available for bait mixers of a size appropriate for counties or communities to build and maintain.

MORMON CRICKETS

Large numbers of crickets developed during the spring of 1946 in several areas in Idaho, Nevada, Oregon, and Washington. Approximately 1,120 tons of bait had been spread by the end of June on 151,000 acres of land by airplanes, by power spreaders, and by hand.

CHINCH BUGS

During the spring and early summer of 1945 cool weather, extremely heavy precipitation, and fungus disease reduced the potential chinch bug damage in most areas.

STORED-GRAIN INSECTS

In tests of new grain fumigants, ethylene dibromide in various combinations with carbon tetrachloride, ethylene dichloride, and carbon disulfide gave good protection from insect infestation to wheat stored in steel bins and wooden farm granaries. A mixture of acrylonitrile and carbon tetrachloride gave excellent results in wheat stored in wooden farm granaries, and mixtures of several nitriles in carbon tetrachloride gave excellent control of insects in wheat stored in steel bins.

DDT applied as a solution, an oil emulsion, or a water suspension was found to be the most effective material for treating interior walls of wooden farm granaries to reduce insect infestations. Experimental treatments of flour and grain sacks and food package wrappings in various ways with DDT and a related compound gave excellent protection of the contents and considerable promise that a safe and commercially practical way of applying such insecticides to food packaging materials may be found.

VEGETABLE INSECTS

In cooperative experiments with the Maine Agricultural Experiment Station, the addition of DDT to fungicide dusts and sprays applied to potato plots appeared to have no visible adverse effect upon the plants controlled infestations of the Colorado potato beetle and potato flea beetles, substantially reduced infestations of aphids, and appreciably increased yields of potatoes. In large-scale field tests, DDT applied as an aerosol gave satisfactory control of the pea aphid and resulted in substantial increases in yield of peas. The DDT aerosol also gave outstanding control of the onion thrips on cucumbers in commercial greenhouses, being more effective than any methods formerly employed. Encouraging preliminary results were obtained in tests with benzene hexachloride against the Mexican bean beetle.

PINK BOLLWORM AND OTHER COTTON INSECTS

In 1945, initial infestations of the pink bollworm were found in Brown and Medina counties, Tex., and reinfestations in Chambers, Harris, and Liberty counties after more than 20 years' freedom. A program was inaugurated in June 1946 to control this insect by applying DDT to the most heavily infested areas of the lower Rio Grande Valley of Texas and Mexico. Continued progress has been made in the cooperative work in Mexico and control practices in the two countries are constantly becoming more uniform.

The boll weevil caused more damage to cotton in 1945 than during any year since 1929, with the exceptions of 1932 and 1941. Serious losses were also caused by the bollworm, cotton flea hopper, and other cotton pests. Extensive tests were carried on in 1945 in cooperation with State Agricultural Experiment Stations and other agencies to obtain further information on the effectiveness of DDT against various cotton insects. These showed that a 10-per cent DDT dust was more effective against hemipterous insects of cotton than any other insecticide tested; that dusts containing from 2.5 to 10 per cent DDT were more effective against the tarnished plant bug than calcium arsenate or sulfur; and that DDT was not nearly so effective as calcium arsenate against the boll weevil. In preliminary tests high concentrations of benzene hexachloride killed the boll weevil more quickly than did calcium arsenate, and it also killed more cotton leafworms, plant bugs, cotton flea hoppers, and cotton aphids, than the standard insecticides. It is the first insecticide ever found that gives promise of destroying the boll weevil, cotton aphid, and other sucking insect pests of cotton at the same time.

GYPSY MOTH

Aerial application of DDT proved to be extremely effective against this insect, and in 1946 more than 60,000 acres of infested woodland were sprayed as part of the control program. The DDT was applied by aircraft, a new type of blower apparatus, and knapsack sprayers on more than 125 square miles of territory in Pennsylvania, eastern New York, and western New England. Preliminary results indicate complete control in areas treated by blowers and aircraft, and from drastic reduction to complete control where knapsack sprayers were used. A major revision of the area regulated because of gypsy moth became effective on Oct. 10, 1945, adding 9,100 square miles to the area.

FOREST INSECTS

The destructive outbreak of the Engelmann spruce beetle in Colorado continued, more than 1,000,000,000 board feet of Engelmann spruce being killed in 1945. Results of large-scale tests conducted in 1945 to determine what effect the widespread use of DDT over forested areas would have on beneficial insects, fish, and wildlife show that where only one pound of DDT per acre was applied, there was no apparent effect on the bird population, generally only slight injury to fish and other aquatic life, and only a temporary reduction in the general insect populations. In the spring of 1946 several large test plots were sprayed with DDT from an airplane for control of the white pine weevil, in cooperation with the New York State Department of Conservation. Preliminary observations indicate that reasonable control was obtained. The spruce budworm infestations covering several hundred thousand acres in Colorado suddenly decreased during 1945. A study of the entomophagous parasites showed a very high population of a number of species, but conclusions regarding the total contribution of parasites to the decline can not be drawn until other control factors are studied.

BEE CULTURE

An antibiotic associated with spores of *Bacillus larvae,* the causative organism of American foulbrood, has been found effective in laboratory cultures against various organisms, including those causing undulant fever, and human and bovine tuberculosis. The first preparations of this antibiotic, however, were exceedingly toxic to test animals. Methods for lowering this toxicity have been developed but, as yet, not to the point where the antibiotic may be safely administered to animals other than mice. A milk test for American foulbrood, based on the production by *B. larvae* of an enzyme that hydrolyzes milk, has been simplified so that it can be used in the field. This test should result in better control of this disease, since it enables apiary inspectors to make definite, on-the-spot determination. Extensive observations have indicated that DDT, when properly applied for insect control, appears not to have lasting effect on honeybee colonies in or near fields treated with this insecticide. Benzene hexachloride proved exceedingly toxic to bees under laboratory conditions.

FOREIGN PARASITE INTRODUCTION

Importations of parasites of the vegetable weevil, the cotton boll weevil, armyworm, and the sugarcane borer were continued. An extensive survey of the principal lime-growing district of the state of Colima, Mexico, disclosed that the parasite *Eretmocerus serius* Silv., which was introduced in 1943, has not effected control of the citrus blackfly. The importation from Australia of insect enemies of the Klamath weed was continued, and feeding tests were made on a series of crop plants.

Completed tests showed no feeding or reproduction by the imported leaf-feeders *Chrysolina hyperici* Foerst. and *C. gemellata* Rossi. The first releases of *C. hyperici* were made in northern California early in 1945, and releases of both species, totaling 19,000 adults, were made late in the summer of that year and in the spring of 1946.

DUTCH ELM DISEASE

There was some extension of the known limits of infection. Spread into Vermont and Kentucky constituted first records for these states. The finding of this disease in Ohio and West Virginia territory already invaded by phloem necrosis has further complicated enforcement of the quarantine. In small-scale tests, bark beetles that transmit the Dutch elm disease fungus and sucking insects that may transmit the virus causing the phloem necrosis disease of elm were controlled by the use of DDT Several large experimental plots were sprayed with power machines, using various formulas and dosages. Tests are under way to determine how many applications per season will be necessary for practical protection.

WHITE PINE BLISTER RUST

There was some extension of this disease in northern California and in the north central region during 1945. Nearly 19,000,000 ribes bushes were removed from 1,018,882 acres, of which 420,628 acres were initial eradication and 598,254 acres were rework.

BLACK STEM RUST

Stem rust on wheat caused very little damage in 1945 but was somewhat more prevalent on oats. Field operations resulted in the eradication of barberries on areas totaling 7,815 square miles, 10,066,871 bushes having been destroyed on 785 new and 1,647 reinfested properties. Ammonium sulfamate and 2,4-D were tested as herbicides. Preliminary readings show ammonium sulfamate to be extremely toxic but 2,4-D does not appear to be so promising.

FOREIGN PLANT QUARANTINES

The discontinuance of wartime restrictions on shipping and the resumption of world commerce materially affected foreign plant quarantine enforcement at maritime ports. Improved procedures for obtaining advance information on expected arrivals have been adopted, thus making possible a more effective utilization of personnel. Work loads were augmented by the arrival of increasing numbers of civilians by boat, as well as by the return of large numbers of troops from theaters of war. Inspection of 47,299 ships during the fiscal year ended June 30, 1946 represents an increase of 33 per cent over the previous 12-month period. Inspection of 58,631 airplanes at 45 ports of entry represents an increase of 28 per cent. Prohibited plant material was taken from 12,156 airplanes, representing an increase of 66 per cent over the previous fiscal year, while the number of arrivals increased only 28 per cent.

A total of 3,368 interceptions of insects and plant diseases were made from airplanes. Many of these pests, including mosquitoes, were stowaways that might menace public health, and plant pests of economic importance were found in plant material. These included a whitefly, the olive fruitfly, pink bollworm, the Mediterranean fruitfly, and others. This emphasizes the growing importance of the airplane as a rapid disseminator of pests between countries and even continents. More than 9,000 freight cars were fumigated as a condition of entry from Mexico. A total of 5,789,244 other vehicles and 1,282,566 pieces of baggage was examined upon arrival from Mexico, in cooperation with United States Customs. These figures represent increases of 22 and 38 per cent, respectively, over inspections made during the previous fiscal year. Greatly expanded air traffic and a revival in shipment of fruits and vegetables from Puerto Rico to the mainland also had a marked effect on plant quarantine activities.

FISHERIES

By Albert M. Day
Director, Fish and Wildlife Service, Department of the Interior

VOLUME OF PRODUCTION

In the first full year of post-war operation, the fisheries of the United States achieved a volume of production only slightly less than the average maintained before the war. The total yield of all fisheries in 1946 was some 4,200,000,000 pounds; during the five years from 1937 to 1941, production averaged about 4,400,000,000 pounds.

Although the 1946 production was not far below average in volume, the year was marked by extremes of success or failure almost without parallel in the history of the fisheries. Rosefish and tuna, for example, exceeded all previous production records; the salmon pack was the smallest since 1927; the menhaden catch was the largest on record; the pilchard fishery experienced the worst season in its history.

The Pacific pilchard or sardine had supported the nation's largest fishery for the past 12 years, but in 1946 the little known menhaden replaced it as the major item in the United States fish catch. In terms of pounds landed, the leading fisheries were menhaden, pilchard, salmon, tuna, Alaska herring, and rosefish, in the order named. These six accounted for more than half of the total production by all fisheries.

MENHADEN

The catch of menhaden was approximately 900,000,000 pounds, compared with 756,000,000 pounds in 1945 and 686,000,000 in 1944. The menhaden, which has supported a fishery since colonial times, now is the basis of a large industry for the manufacture of fish meal and oil. Centers of the menhaden industry in 1946 were Lewes, Del., Reedville, Va., Port Monmouth, N. J., Beaufort and Morehead City, N. C., and Fernandina, Fla.

PILCHARDS

After maintaining a production averaging close to 1,000,000,000 pounds in the past decade, the pilchard fishery landed only 491,000,000 pounds in 1946, or about one-half the quantity taken the previous year. The canned pack amounted to 3,050,100 cases. Pilchards were notably scarce in the waters of northern and central California, ordinarily the center of a busy fishery. Most of the pilchard boats that usually fish out of San Francisco and Monterey either turned to other types of fishing or moved to other ports, almost the entire 1946 catch of pilchards being made off southern California.

SALMON AND TUNA

Salmon was another Pacific Coast fishery that declined far below normal yields. The pack of 4,396,684 cases by canneries in the United States and Alaska was the smallest since 1927. In 1945, also a poor year, 4,900,471 cases of salmon were packed.

Tuna landings by the California fleet were so large that this industry set a new production record in 1946—4,760,000 standard cases as compared with a 1945 pack of 4,237,000 cases. The California tuna clippers again operated in distant waters below the Equator which had been closed to fishing during the war. In contrast to the success of the southern tuna fishery, the runs of albacore off the coasts of Oregon and Washington were so sparse that this fishery was almost a complete failure.

ALASKA HERRING

Alaska herring, which along with menhaden and pilchard supplies the raw materials for the fish meal and fish oil industries, continued the increase in productivity begun several years ago. From 113,000,000 pounds in 1944 and 120,000,000 in 1945, the catch of herring in the territory rose to approximately 190,000,000 pounds in 1946. Practically the entire catch of this fishery was converted into oil and meal.

THE NEW ENGLAND FISHERIES

Although the New England fisheries as a whole were slightly less productive in 1946 than in 1945, the major species in the catch—rosefish—made a gain of 38 per cent compared with the previous year. Although rosefish was a little used and almost unknown species only a little more than a decade ago, landings in 1946 totaled 180,000,000 pounds, or about a quarter of the total New England fish catch. Landings of all species at the principal New England ports amounted to 640,000,000 pounds, compared with 670,000,000 in 1945.

As in 1945, Gloucester received a larger poundage than any other Atlantic Coast port. Vessels fishing the North Atlantic banks landed at Gloucester 218,000,000 pounds, of which about 60 per cent was rosefish. Although Boston's landings—159,000,000 pounds—were smaller than Gloucester's, their total value was greater: $13,200,000 compared with $11,200,000. This difference was owing to the fact that haddock and cod, the chief items in the landings at Boston, bring a higher price than the leading Gloucester species, rosefish.

PACIFIC COAST FISHERIES

On the Pacific Coast, landings of salmon, halibut, flounders, and miscellaneous species at Seattle totaled about 55,000,000 pounds in 1946, a decline of some 5,000,000 pounds from the 1945 figure.

The pack of canned mackerel in 1946 was 910,200 standard cases. The Pacific halibut quota for 1946, established by the International Fisheries Commission in accordance with a treaty with Canada, was 52,500,000 pounds, the same as in 1945. The season was closed on August 19, 1946, after United States vessels had taken 39,300,000 pounds and Canadian vessels 17,900,000 pounds.

San Pedro was not only the most active port on the Pacific Coast but ranked first among all ports in the United States with landings of approximately 575,000,000 pounds having an estimated value of $17,000,000. This port received most of the pilchards and mackerel landed on the Pacific Coast and nearly half of the tuna.

Because of the failure of the 1946 pilchard fishery in northern and central California, the ports of Monterey and San Francisco, which normally handle enormous tonnages, declined to less important positions among United States fishing ports than they had held for several years.

FISH MEAL AND OIL

Production of fish meal in 1946 totaled 174,703 tons, compared with 185,399 tons in 1945. Fish oil likewise declined from 23,697,564 gallons in 1945 to 18,905,506 gallons in 1946. These reduced yields were the direct result of the failure of the pilchard fishery, normally the largest supplier of raw material for the fish oil and fish meal industries. The effects of the disastrously poor pilchard season were offset to some extent by the enormous catches of menhaden, which comprised somewhat more than half the production of both meal and oil. Both of these products are used extensively in animal feeding as sources of proteins and vitamins; fish oil also has a variety of industrial uses.

FUR SEALS

The fur-seal herd of Alaska's Pribilof Islands, a resource managed by the Fish and Wildlife Service, numbered 3,386,008 animals when the annual census was taken in August. This represents an increase of 7.31 per cent over the 1945 census. When the Government assumed management of the fur-seals in 1910, the herd contained only about 132,000 animals.

Government-administered sealing operations on the Islands during the 1946 season resulted in a take of 64,523 skins. Because of the late arrival of the seal herd at the Islands, probably occasioned by the unusually severe winter the previous year, the 1946 take was smaller than the 1945 by 12,441 skins.

At the public auctions held in St. Louis during the year, 54,064 fur-seal skins and 971 fox skins were sold for the account of the Government for a total of $3,861,410.

FISHING FLEETS

Although the number of fishing vessels, especially those of large size and wide cruising radius, had been greatly reduced during the war period by the requisitioning of such vessels for military use, the fleets on both coasts were restored in 1946 to a productive capacity greater than before the war. More than 1,000 fishing vessels were documented during the year, compared with 739 in 1945. Of the boats documented in 1946, about 85 per cent had been newly constructed in that or the preceding year. In an average year, only about 275 boats are added to the fleets to replace those lost by obsolescence or disaster.

INLAND FISHERIES

On the whole, the inland game fisheries of the United States were not adversely effected by the war. To a great extent the moderate drain on fresh water fisheries was linked with the rationing of gasoline and tires, which prevented anglers from traveling any great distance to fish. Waters near metropolitan areas were heavily fished, and in some sections the stock of fish was reduced to a certain extent. In other waters where the fishing pressure was less the stock was rebuilt somewhat.

Federal fish hatcheries, 108 in number, produced a total of 5,454,557,885 eggs, fry, and larger fishes during the calendar year 1945, the most recent for which a complete tabulation is available.

The stocking of multiple-purpose farm ponds with fish from Federal hatcheries reached a new peak during the calendar year 1945. During this period 7,600,000 fish were supplied to stock farm ponds, an increase over 1944 of more than 90 per cent. Farm ponds created under the auspices of the Soil Conservation Service received 4,900,000 fish. Many of the remaining fish were planted in ponds sponsored by the Agricultural Extension Service and the Agricultural Adjustment Agency. In connection with the stocking of farm ponds, the Fish and Wildlife Service made 13,276 individual plantings during the year. These represented only a portion of the total ponds stocked since many areas were planted with fish from state hatcheries. Most of the fish planted in farm ponds were warm-water species, with large-mouth black bass and bluegill sunfish the most popular forms.

During recent years the economic value of farm ponds has been thoroughly proved. It has been found that these small ponds, usually one to five acres in area, will produce 200 to 300 pounds of edible fish per acre annually, especially in the South, if they are properly fertilized and fished.

CONSERVATION OF FISHERY RESOURCES

One of the most important and far-reaching events of the year in conservation was the amended Coordination Act of 1946, known as the Act of Aug. 14, 1946, Public Law 732. It provides that Federal and state wildlife agencies acting through the Fish and Wildlife Service shall be given opportunity to participate in planning when any major construction development affecting fish and wildlife in rivers, streams, or other waterways is undertaken by the Federal Government.

On April 2, 1946, the United States and Canada signed a treaty to provide for the development, protection, and conservation of the fishery resources of the Great Lakes.

During November an international conference on the whale fisheries of the world was held in Washington to provide more effective means of conserving this resource.

FORESTRY

By Charles E. Randall
U. S. Forest Service, Department of Agriculture

GENERAL

The supply of timber products, which was short of demand throughout the war period, continued inadequate in the first full post-war year 1946. Pulp and paper were short. Lumber and plywood shortages greatly retarded progress in the Government's program to expedite housing construction. Distribution controls on lumber, which had been removed soon after the war ended, were restored early in 1946 to give priorities assistance to residential construction.

SAWTIMBER

A reappraisal of the forest situation in the United States, completed by the U. S. Forest Service in 1946, clearly indicated that the current shortage of timber products was not a temporary one. Under prevailing forest management practices, the trend in the forests was definitely toward scarcity.

A government estimate in 1909 placed the total volume of standing sawtimber in the United States at 2,826,000,000,000 board feet. The Forest Service reappraisal estimate, as of 1945, was 1,601,000,000,000 board feet, an indicated decrease of 44 per cent in 36 years. The actual decrease was probably even greater, since many kinds of trees which were formerly considered of no value are now being used and are included in the 1945 estimate, as well as trees of smaller size. Sawtimber, in the reappraisal estimate, means trees large enough to saw into lumber, whether or not so used.

The reappraisal showed a drop of 9 per cent in the nation's sawtimber stand as compared with estimates made by the Forest Service for the Joint Congressional Committee on Forestry in 1938. More than half of the present sawtimber stand is in what is left of the virgin forests, practically all of which are in the western states. Approximately a third of the remaining virgin timber, however, is of relatively low value species. In the states east of the Great Plains, which contain three-fourths of the country's total commercial forest land area, large areas have been taken over by inferior species or scrub growth, and there has been a general downward trend in tree sizes. Readily accessible, merchantable standing timber has become increasingly scarce in all regions.

The annual drain of sawtimber from the nation's forests was reported to be 53,900,000,000 board feet, while the amount of wood added to the timber stands each year by growth was only 35,300,000,000 board feet. Sawtimber drain thus exceeds growth by 18,600,000,000 board feet a year, or more than 50 per cent. The drain figure included losses from fire, wind-storms, insects, and diseases, but 90 per cent of it was from cutting timber for use. Much of the drain is of high quality material, whereas the growth is generally of poorer quality.

TIMBER-CUTTING SURVEY

The Forest Service reappraisal included a field survey of prevailing methods of timber cutting. It showed that prevailing cutting practice is still of the type that has resulted in progressive deterioration of large areas of forest. For the commercial forest lands of the United States as a whole, 23 per cent of all cutting was classed as good or better, 25 per cent as fair, and 52 per cent as poor or worse, from the standpoint of keeping the land continuously productive.

Cutting practices on public forest lands were notably superior to those on private lands. On the national forests, 80 per cent of all cutting was rated good or better. On private lands, only 8 per cent was good; 64 per cent was poor to destructive. Three-fourths of the nation's commercial forest acreage, including most of the land of highest potential timber-producing capacity, is in private ownership. The problem of assuring the country an adequate future supply of timber, therefore, is largely one of improving practice on private lands.

FOREST POLICY RESPECTING TIMBER SUPPLY

Heretofore, virgin timber and natural second-growth has provided almost the entire supply of wood in the United States. Man has taken only a very minor hand in growing the trees. In presenting the results of its reappraisal, the Forest Service pointed out that the United States was becoming increasingly dependent for its timber supplies on what it could grow. A forest growing stock must be built up and maintained large enough so that, as one year's crop is harvested, enough trees will be coming of age to provide the next year's crop. For a strong, expanding national economy, the Forest Service stated, sound forest policy should look to a growing stock that will yield an annual crop twice as great as present sawtimber growth.

"Whether we are in for a permanent timber shortage or whether we shall once again achieve timber abundance depends largely on what we do now," said Lyle F. Watts, Chief of the U. S. Forest Service, in his annual report for 1946. "A crop of wood cannot be grown in a single year like a crop of corn. Tomorrow's wood supply is in the trees growing in the forests today. We have the forest land. The challenge is to grow the timber."

PROPOSED FOREST PROGRAM

The program recommended by the Forest Service to build up the nation's growing stock of timber and keep its forest lands permanently productive included:

1. Increased public aids and services to help achieve good forestry practice on private lands. Among the proposed aids to private owners would be expanded research in forest management and wood utilization; technical advice and assistance on timber management, harvesting, and marketing problems; increased public cooperation in fire control; aid in protection against forest insects and diseases; aid in development of cooperative associations of small forest owners; and provision for long-term loans at reasonable rates to private forest operators to facilitate the conversion of their operations to a sustained-yield basis.

2. Public control of cutting and other practices sufficient to prevent destructive practices and require forest lands to be maintained in reasonably productive condition. The Forest Service proposed a Federal-state plan of regulation, under which the basic standards of practice would be set up by national legislation, but the actual regulatory work would be carried out by the individual states.

3. Expansion and development of public forests. Acquisition and management by Federal, state, and local governments, it was stated, is the only practicable way to assure stable ownership and satisfactory management for a large acreage obviously not suited to or destined for permanent private development. This would include substantial areas of depleted lands that are unlikely to be restored to productive condition by private owners, areas of such low productivity or inaccessibility as to be unattractive to private enterprise, and key areas for watershed protection or other public purposes.

4. An expanded public program of reforestation, forest rehabilitation, and timber stand improvement.

AMERICAN FOREST CONGRESS

The American Forestry Association, an organization of citizens devoted to the advancement of forest conservation, also completed a two-year appraisal of forest resources. Findings of this independent survey were in general agreement with those of the more comprehensive reappraisal made by the Federal Forest Service. To present these findings and provide an opportunity for public discussion of the problems involved, the Association called an American Forest Congress, which met in Washington, D. C. Oct. 9-11, 1946. Representatives of Federal and state forestry agencies, forest industries, labor unions, and various civic groups participated in the discussions.

All groups agreed on the need for positive nationwide action to stop the downward trend of the country's forest resources and bring about better management of forest lands, but opinions varied as to methods. The chief point of controversy was the question of regulation of timber cutting, although the consensus was that some degree of public regulation was necessary. Representatives of the forest industries generally favored regulation by the individual states without Federal participation. Other groups favored either direct Federal regulation or a cooperative Federal-state plan such as that proposed by the Forest Service. In the light of the discussions, the American Forestry Association planned to draft a comprehensive forest conservation program which it hoped would win unanimous support.

THE NATIONAL FORESTS

The total cut of timber from the national forests in the fiscal year ended June 30, 1946 was 2,700,000,000 board feet, a little under 10 per cent of the country's total output. The importance of the timber resources of the national forests continues to increase as timber supplies of the nation as a whole decline. Any further increase in output from the national forests, however, will depend largely upon construction of new roads to open up stands now inaccessible.

A program of access road building was started in 1946. The congressional appropriation of $7,000,000 for this purpose was supplemented by funds made available by the National Housing Agency. The road program will make additional timber available under Forest Service management policies which provide for utilization of mature or over-mature timber, improvement of forest growth, and continuous production. Eventually, the Forest Service believes the annual sustained yield of timber from the National Forests can be more than doubled.

WORLD FORESTRY ORGANIZATION

Organization of a Branch of Forestry and Forest Products in the United Nations Food and Agriculture Organization was accomplished in 1946. In 1944, a temporary forestry committee was set up under FAO which laid the groundwork for the permanent international forestry organization. Henry S. Graves, dean emeritus of the Yale School of Forestry, was chairman of the interim committee. A report issued by this committee in 1945 called attention to the fact that forest resources were declining on a worldwide scale.

Appointment of Marcel LeLoup of France as Director of the new international Branch of Forestry and Forest Products was announced in June, 1946. LeLoup is a forester and administrator of wide experience. Born in Brittany in 1897, a veteran of the First World War and graduate of the forestry school at Nancy, France, he served in the French Colonial Forest Service in Africa and in varied forest work in France. He was named Director General of the French Department of Forests and Waters in 1944.

Stuart Bevier Show, an American forester, was named deputy director and chief silviculturist of the international forestry branch. Show for the past 20 years was regional forester for the U. S. Forest Service, in charge of the national forests of California.

The world forestry organization established headquarters in Washington, D. C., and prepared to set up worldwide forestry statistical services, assist governments with advice on forest policy, send out missions to make scientific studies, promote research and circulate findings among nations, and facilitate exchange of scientific personnel.

AWARD OF THE SCHLICH MEDAL

The Society of American Foresters, professional organization of foresters in the United States, held its annual meeting in Salt Lake City in September, 1946. At this meeting, the Schlich memorial medal, highest international honor in forestry, was awarded to William B. Greeley, chairman of trustees of the American Forest Products Industries, Inc. Greeley was Chief of the U. S. Forest Service from 1920 to 1928. As executive secretary of the West Coast Lumberman's Association during the following 18 years, he made outstanding contributions to the advancement of industrial forestry.

The Schlich medal is named in honor of the late Sir William Schlich. British forester, who was inspector general of forestry in India, professor of forestry at Oxford, and author of technical works used by foresters throughout the world. The memorial medal was established in his honor by British and American foresters following his death in 1925. In the United States, the award is administered by the Society of American Foresters. Three previous awards have been made to Americans: Franklin D. Roosevelt (1935), Gifford Pinchot (1940), and Henry S. Graves (1944).

GIFFORD PINCHOT

Foresters and conservationists throughout the United States mourned the death of Gifford Pinchot (Oct. 4, 1946). Pinchot gave the first great impetus to the conservation movement in America. He was the first Chief of the U. S. Forest Service (1905-1910), founder of the Society of American Foresters, and a leader in the development of the profession of forestry and of technical forestry education in the United States. He was active in many fields and served two terms as Governor of Pennsylvania, but his outstanding contribution was his lifelong crusade for the conservation of national resources. His efforts were responsible, directly or indirectly, for much of the progress of the last half century in the advancement of scientific forestry practice in the United States.

PERIODICAL PUBLICATIONS

Agricultural Education
1714 Locust Street, Des Moines, Ia.
Agricultural Engineering
American Society of Agricultural Engineers, St. Joseph, Mich.
American Agriculturist
Savings Bank Bldg., Ithaca, N. Y.
American Forests
American Forestry Association, 919 Seventeenth St., N.W., Washington, D. C.
American Fruit Grower
1370 Ontario Street, Cleveland, O.
Country Gentleman
Curtis Publishing Company, Independence Square, Philadelphia.
Cotton Trade Journal
Cotton Exchange Bldg., Memphis, Tenn.
Dairy World
608 South Dearborn Street, Chicago.
Farm Journal
Farm Journal Inc., Washington Square, Philadelphia.
Fishing Gazette
461 Eighth Ave., New York City.
Hoard's Dairyman
Fort Atkinson, Wis.
Journal of Agricultural Research
Superintendent of Documents, Washington, D. C.
Journal of Dairy Science
North Queen Street, Lancaster, Pa.
Journal of Farm Economics
American Farm Economic Association, Menasha, Wis.
Journal of Forestry
Society of American Foresters, Mills Bldg., Washington, D. C.
Pacific Fisherman
71 Columbia Street, Seattle, Wash.
Produce News
6 Harrison St., New York City.

Successful Farming
Meredith Publishing Company, Des Moines, Ia.

Wallace's Farmer and Iowa Homestead
1912 Grand Ave., Des Moines, Ia.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASSN. OF NURSERYMEN, P.O. Box 355, Louisiana, Mo.

AMERICAN COUNTRY LIFE ASSN., 297 Fourth Ave., New York City.

AMERICAN FARM BUREAU FEDERATION, 58 E. Washington St., Chicago, Ill.

AMERICAN FORESTRY ASSN., 919 Seventeenth St., N.W., Washington, D. C.

AMERICAN MEAT INSTITUTE, 59 East Van Buren St., Chicago.

AMERICAN NATIONAL LIVESTOCK ASSN., 515 Cooper Bldg., Denver, Col.

AMERICAN ORNITHOLOGISTS' UNION, Ohio State University, Columbus, Ohio.

AMERICAN PHYTOPATHOLOGICAL SOCIETY, Bureau of Plant Industry, Washington, D. C.

AMERICAN POULTRY ASSN., 3030 Brady St., Davenport, Iowa.

AMERICAN SOCIETY OF AGRONOMY, Agricultural Experiment Station, Morgantown, W. Va.

AMERICAN SOCIETY OF ANIMAL PRODUCTION, Kansas State College, Manhattan, Kans.

AMERICAN SOCIETY OF EQUITY, 311 Daily Star Bldg., Minneapolis, Minn.

AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE, Lock Box 299, Geneva, N. Y.

AMERICAN SOCIETY OF MAMMALOGISTS, Museum of Zoology, University of Michigan, Ann Arbor, Mich.

AMERICAN VETERINARY MEDICAL ASSN., 600 S. Michigan Ave., Chicago, Ill.

ASSOCIATION OF LAND-GRANT COLLEGES AND UNIVERSITIES, c.o. Experiment Station, Lexington, Ky.

BOYCE-THOMPSON INSTITUTE FOR PLANT RESEARCH INC., 1086 N. Broadway, Yonkers, N. Y.

DAIRYMEN'S LEAGUE CO-OPERATIVE ASSOCIATION, INC., 11 W. 42nd St., New York City.

FARM WOMEN'S NATIONAL CONGRESS, Clarksville, Ia.

INTERNATIONAL FARM CONGRESS OF AMERICA, Continental Bldg., Kansas City, Mo.

IZAAK WALTON LEAGUE OF AMERICA, La Salle Hotel, Chicago, Ill.

JEWISH AGRICULTURE SOCIETY, INC., 386 Fourth Ave., New York City.

MIDDLE ATLANTIC FISHERIES ASSN. INC., 203 Front St., New York City.

NATIONAL AUDUBON SOCIETY, 1006 Fifth Ave., New York City.

NATIONAL BOARD OF FARM ORGANIZATIONS, 1731 I St., N.W., Washington, D. C.

NATIONAL DAIRY COUNCIL, 111 N. Canal St., Chicago, Ill.

NATIONAL EDUCATIONAL AND CO-OPERATIVE FARMERS' UNION OF AMERICA, 1731 I St., N.W., Washington, D. C.

NATIONAL FERTILIZER ASSN., 616 Investment Bldg., Washington, D. C.

NATIONAL GRANGE, 744 Jackson Place, N.W., Washington, D. C.

NATIONAL HIGHWAYS ASSOCIATION, Bass River, Cape Cod, Mass.

NATIONAL LIVESTOCK AND MEAT BOARD, 407 S. Dearborn St., Chicago, Ill.

NATIONAL POULTRY COUNCIL, Davisville, R. I.

PEOPLE'S LOBBY, INC., 1410 H Street, N.W., Washington, D. C.

SOCIETY OF AMERICAN FLORISTS AND ORNAMENTAL HORTICULTURISTS, INC., 600 S. Michigan Ave., Chicago, Ill.

SOCIETY OF AMERICAN FORESTERS, 825 Mills Bldg., Washington, D. C.

UNITED STATES LIVESTOCK SANITARY ASSN., 33 Livestock Exchange Bldg., Wichita, Kan.

VEGETABLE GROWERS' ASSN. OF AMERICA, c.o. F. L. Allen Co., Philadelphia, Pa.

WOMEN'S NATIONAL FARM AND GARDEN ASSN., INC., Amber, Pa.

DIVISION XII

MINERAL INDUSTRIES

GOLD, SILVER, AND PLATINUM

By Walter Renton Ingalls
Consulting Engineer, New York

GENERAL

Gold and silver are commonly described as the precious metals, included with them should be platinum, palladium, and the others of the platinum group. More accurately these should be described as the noble metals, for the advent of such new and useful metals as indium, germanium, etc., which in market value may be superior to silver, must now be considered.

GOLD

There is little to be added to the report on this subject for 1945. World's production, climaxing at 40,925,000 oz. in 1940, has been steadily diminishing since then, and having fallen to about 27,000,000 oz. in 1944, the American Bureau of Metal Statistics reckoned only 26,500,000 oz. for 1945. In 1946 the decline continued, for production in the great source of gold, *i.e.*, the Witwatersrand, which has continued to afford 12,000,000 oz. out of the annual total has been slightly unsteady, and elsewhere the contraction in copper and lead production has naturally been adverse to gold production. These remarks are based on the assumption that the gold production of Russia and Siberia has been about 4,000,000 oz. per annum; and that in Japan, Korea, and Manchuria it has been about 1,300,000 per annum; in respect of which parts of the world there is no information outside of them. In Moscow gold production has been a top-secret ever since about 1936. Consequently our current estimates of world's gold production are subject to correction when, as, and if the secrets be revealed.

The worldwide unrest of labor, the granting of demands for higher wages, and the increase in price level in general made conditions uncomfortable for producers of gold in South Africa and almost everywhere else, with the omen that there will be this economic restraint upon gold production. In Canada labor was enticed away from the gold mines by the higher wages offered in lumbering and otherwise.

ORANGE FREE STATE

Since 1936, prospecting by geophysical methods and by deep boreholes has been going on in an area around St. Helena in the Orange Free State, and during 1946 the indications became accepted that a goldfield of considerable size will be developed there. This is becoming known as the Odendaalrust field. The St. Helena discovery did not result from tracing the Witwatersrand beds and occurs in a different geological formation. In this sense it may be regarded as the only entirely new discovery in this region since the Rand bankets were first found in 1886. From St. Helena to the nearest point where payable values are known to exist in the Witwatersrand is 70 miles. During 1946 there was excitement from some boreholes giving rich samples.

GERMAN LOOTINGS

Not much has become known in respect of German lootings of gold, stocks, etc. beyond what was reported in this review a year ago. It was reported (May 27, 1946) that Switzerland had agreed to surrender to the Allies its hoard of Nazi looted gold, $58,140,000, or some 1 2/3 million ounces, looted chiefly from Belgium and France. There is no reason to revise the opinion of last year to the effect that the Germans in May, 1945, did not have much gold in their possession or to their credit.

It was reported in the newspapers, Aug. 28, that all the gold in Japan (about $200,000,000, equal to about 5,700,000 oz.) is to be claimed by the United States to defray the cost of occupation.

GOLD PRICE

Apart from the Witwatersrand (Transvaal) and Russia, the world's greatest gold-producing country from mines worked principally for gold is Canada, which possesses the important districts of the Yukon and Ontario-Quebec. On July 5, 1946, the Canadian Foreign Exchange Control Board raised the Canadian dollar to par with the American dollar for the first time since October, 1939, thus erasing the discount of 10 per cent. The Canadian price for gold was thus dropped from $38.50 per ounce to $35, extinguishing the prior advantage of gold mines. Late in 1946 the Canadian dollar fell to about 95 cents although the official rate of exchange continued at par. As in 1945 the London rate remained at £1 = $4.025.

MONETARY STOCK OF GOLD

According to the *Federal Reserve Bulletin,* the world's stock of gold at the end of 1928 was 486,454,000 oz., of which 181,180,000 were in the United States. At the end of September, 1944, it was 1,006,000,000 oz., of which 595,000,000 were in the United States. The increment from 1928 to 1944 includes 41,569,000 oz. from liquidation of hoards, chiefly in India. At the end of 1945 gold reserves were still difficult of computation owing to silences during the war, etc. The American reserve was about 589,000,000 oz. at the end of 1944 and 573,000,000 oz. at the end of 1945.

SILVER

The world's production of silver has been declining ever since 1940 in which year it was computed as 273,400,000 oz. The decline in production since then has been ascribable in part to the decline in the production of copper and lead from which a large part of the silver is obtained as a by-product, and in part to military interruption, including the loss of such a large production as that of Burma (about 7,000,000 oz. per annum). The American Bureau of Metal Statistics, reporting in May, 1946, was of the opinion that the world's production of silver in 1945, outside of the unknown Asiatic, was probably no more than 150,000,000 oz. The conditions diminishing silver production in the United States in 1946 were even more pronounced than in 1945.

Production of silver in the United States was only 6,000,000 oz. in the first half of 1946, having been curtailed by the less production of copper and lead ores from which most of our domestic silver is derived. The total for 1946 will be substantially less than the total for 1945 (29,332,000 oz.). Production in Mexico in the first half of 1946 was 20,000,000 oz., curtailed by strikes, and its total for 1946 will be less than the 60,000,000 oz. of 1945. In Australia, Canada, and Peru, production in 1946 was running at about the same rate as in 1945. The five countries hereinbefore mentioned accounted for about five-sixths of the world's silver in 1945 outside of the unknown Asiatic.

COMMERCIAL CONDITIONS

On the other hand the industrial use of silver has been increasing sharply, and in the United States it has attained a steady level of about 125,000,000 oz. per annum. As compared with five years ago, there has been an increase under most heads, but especially in sterlingware, nitrate (for photography), jewelry, and such new uses as brazing alloys and electrical contacts, each of which has been absorbing about 15,000,000 oz. per annum.

With this clear condition of unbalance between demand and supply it was natural that the market for silver became uneasy. Adjustments in the United States had been made in 1945 by OPA lifting the price to 71.11c. per ounce for both foreign and domestic silver. The Canadian Government, however, continued to hold its old ceiling price of 40c. per ounce, but on Feb. 1, 1946 it was rescinded. In the meantime the Green Act liberating Treasury silver for use in the arts expired with the end of 1945, and manufacturers were embarrassed by the absence of supply, legislation to ameliorate the situation having been proposed in Congress but becoming involved in the wrangle that always occurs when the price for silver is the subject.

As early as June, sales of foreign silver refined in the United States were reported as being made at 82-88c. for export for coinage abroad. With the expiration of OPA (June 30) Mexican silver began to move into American industry on the basis of 90-92c. per ounce. On July 12 Handy & Harman posted the official price at 90⅛c. This was withdrawn on July 26 upon the reestablishment of OPA, which restored the former ceiling price of 71.11c. Sellers being unwilling to offer silver at that price the result was cessation of transactions in the New York market. On July 31, Congress enacted a silver purchase and sales act, authorizing the Treasury to buy silver newly mined in the United States at 90.5c. per ounce, if mined subsequent to July 1, 1946 and offered within a year. The Treasury was further authorized to sell to industry unobligated silver at 91c., the differential of ½c. being to cover handling charges. On Aug. 6, silver advanced to 55½ pence London, equivalent to 93¼c. New York, the difference between the London price and the U. S. official being to cover shipping charges, etc. Silver in the United Kingdom continued to be controlled by the Treasury. During the last quarter of 1946 the New York official price was 90⅛c. until about the end of December when it fell to 83¾c.

GREAT BRITAIN, INDIA, AND MEXICO

The events in silver naturally had important repercussions in Mexico and India. On May 23, the Government of India announced the introduction of half and quarter rupee coins of pure nickel as a substitute for nickel-silver alloy, the purpose being to save silver and make it easier to return within five years of the end of the war the 226,000,000 oz. of silver borrowed from the United States between 1943 and 1945. Previous reduction of the silver content of the rupee had failed to offset the upward trend in the price for silver.

During September, it was reported that the British Government had decided to take silver out of its currency, substituting nickel, this being expected to release 250,000,000 oz. of silver needed to replace silver borrowed under lend-lease.

SILVER STOCK IN THE UNITED STATES

The stock of silver held by the U. S. Treasury at the end of 1945 was 2,005,120M ounces (68,746.2 tons of 2,000 lb. avoirdupois) compared with 80,406.2 tons at the end of 1944 and 92,111.6 tons at the end of 1943. Under the terms of the Green Act, effective July 12, 1943 and ending with 1945, sales to domestic industry aggregated 140,634,415 oz., and 26,745,826 oz. were sold to the Philippine Government for coinage. The Treasury stock of silver includes that which had been loaned for use in defense plants.

During October, 1946, arrangements were made for return to the U. S. Treasury of the silver thus loaned for use as busbars and otherwise in industrial plants. At the end of 1945 this loan aggregated 30,092.7 tons avoirdupois. Much of the silver was used in the aluminum and magnesium plants and a good deal in the atomic bomb plants. This silver will have to be recast into either Mint bars or commercial bars.

PLATINUM

Among the precious metals are those of the platinum group, especially platinum and palladium. World's production of platinum, so far as known, is about 300,000 oz. per annum, derived chiefly from Canada (162,000 oz. in 1945), Colombia (40,000), Transvaal, South Africa (58,000) and United States (40,000). There is also an unknown production in the Urals, which formerly was the world's chief source but which in recent years has been a secret of the USSR. Conjecturally it is of the order of 100,000 oz. per annum.

The production in Canada is entirely as a by-product from the nickel-copper ore refined by the International Nickel Co. The production of palladium is also a by-product of the International Nickel Co. and in 1945 amounted to about 140,000 oz.

Platinum is used especially in the chemical industry, in electrical manufacture, and in jewelry. Palladium is used in similar ways, but most largely for jewelry, it being a constituent of the alloy known as white gold.

During 1945 the price for platinum was $35 an ounce, and for palladium $24. Early in 1946 these metals were liberated from OPA control, whereupon the price for platinum quickly rose to $53 an ounce. Near the end of June it rose further to $67, advanced to $80 in August, and to $90 in September. Early in October it receded to $85 and then dropped rather quickly to $69, but recovered to $70 and then relapsed to $53. Throughout 1946 the London market kept step with New York. In the meantime the price for palladium remained at $24. The advance in the price for platinum is explained as reflecting increased demand for it in jewelry, but about the middle of 1946 there was certainly a speculative interest in it for the purpose of hoarding. Gold being unobtainable for that purpose, thoughts turned to platinum as another precious metal, highly useful and always of value, though unsteady.

IRON AND STEEL

By THOMAS C. CAMPBELL
NEWS-MARKETS EDITOR, *The Iron Age*

GENERAL

Whether or not they realize the full significance of it, steel labor and steel management have entered a period when the law of diminishing returns is definitely operating against both. The wage increase which the steel union will wring from steel firms in 1947 and the prices which must be raised partially to offset the resultant increase in steelmaking costs may set in motion a chain of events which will eventually cost both groups far more than they are expecting in lost wages and lost production.

Because users of steel have never been able to get enough material to set up a production schedule that would anywhere near satisfy demands made upon them, there has been a disposition to pay any price, submit to any conditions, or to take something other than what was wanted in order to keep plants in operation and skilled workmen on the payroll. This will not always be the case. The cost of steel is a universal gauge in pricing items into which steel goes. It has always been this way, and most firms utilizing steel use a formula to establish their prices the base of which is the net price paid for steel.

STEEL WAGES AND PRICE FACTORS

Steel wages have almost the same relationship to other wages as steel prices do to items made from steel.

This was well demonstrated when early in 1946 the increase in steel wages and in steel prices caused a breakthrough in the "hold the line" policy. This action formed a pattern for other industries, and the gains made by steel labor were shortlived. No single group can obtain wage advantages for long when other groups are well organized and can demand similar concessions. The same general condition applied to steel management. When the price of steel was increased, this set off a wave of prices in other fields with the result that the cost of making steel went up again because of higher material and equipment prices.

Steel industry and labor now seem ready to repeat the whole process which brought such little return to labor and management in 1946. The two groups stand a good chance of making a start at real collective bargaining, but the cards seemed stacked against both. Labor is afraid of rising prices. Management, seeing for the first time a chance to make bigger profits, is absorbed in figuring out how to do this and still meet labor's demands.

If conditions in 1947 follow the pattern of 1946, the long awaited and long debated period of four to five lush years may never come, or before it does show its tardy head, both labor and business will suffer at the hands of those who make or break prosperity for both—the public. Already many would-be consumers have given up buying that "treasured dream," either because they have found they can now get along without it or because when they pay their bills they have little or nothing left over.

Another year with from 14,000,000 to 16,000,000 tons of steel lost because of steel and coal strikes would so upset the system of distribution in the United States that a complete breakdown in the economy of the country might result. Most steel leaders know this, and so do intelligent labor leaders. Both, however, are so driven by the immediate demands of their respective groups that it is hardly likely that either will be able to do anything in 1947 except the obvious—the union holding out for higher wages with the threat of strikes and business heads raising prices to make up for wage increases which they will give only to keep the wheels of production going.

STRIKES AND PRODUCTION

Any attempt to indicate that labor relations are not again the major theme in 1947 is akin to burying one's head in the sand. The disastrous results of three major strikes—steel, coal and electrical equipment—in 1946 are still apparent. Not only has the country failed to keep up with demand on the homefront but a large segment of the population has suffered so long from strike-fear neurosis that a part of it is immuned to expressing shock or indignation. This state has so affected workers that productivity is far from what it should be, and the day when a man or woman did a good day's work seems to have been replaced by the feeling that if one reports for work the obligation has been fulfilled.

All efforts of economists and management to portray the fact that real wages are the ones which pay the bills failed of their purpose in 1946. No attempt to show that higher wages followed by higher prices meant static condition or even a loss in real wages was successful. The suspicion of the average workman towards his company and towards economists in general is as strong as it ever was. The workmen feel that to get an increase in actual money is better than taking a chance that if they do not get it prices will not go up.

The numerous strikes which occurred with monotonous regularity in 1946 have, in one way, contributed to inflation by cutting down the production of goods. The settlement of these strikes, which has always resulted in healthy wage increases and higher prices, has laid the groundwork for the inflation which all seem to fear but do little about. It may be, however, that prices in 1947 will go too high to support a normal high business cycle with the result that a severe testing of all prices, especially steel, is in store before the year is out.

STEEL PRODUCTION

Steel production in 1946 amounted to about 65,900,000 tons of ingots compared with 79,400,000 tons in 1945. Barring strikes and other slowdowns, the industry in 1947 will probably turn out close to 80,000,000 tons of steel ingots. However, should the inventory situation and the overpricing in the general economy have the effects which some quarters look for, steel ingot production in 1947 may not range more than 70,000,000 to 75,000,000 tons of steel ingots.

Alloy steel production in 1946 amounted to approximately 6,025,000 tons compared with 8,648,000 tons in 1945. Carbon steel output in 1946 amounted to 59,875,000 ingot tons compared to 70,743,000 in 1945.

Of the total alloy steel production in 1946, 73 per cent was made by the openhearth process and 27 per cent was made in electric furnaces. In 1945 the relationship was 67.6 per cent by the openhearth and 32.4 per cent by electric furnaces.

Total pig iron production in 1946 is estimated at 45,450,000 tons, compared with 54,919,000 tons in 1945. Blast furnaces throughout 1946 were shut down a number of times because of strike conditions.

Finished steel production in 1946 amounted to 46,868,000 tons compared with 56,946,000 tons in 1945. The pattern of distribution of finished steel in 1946 was almost identical with the pre-war year of 1939. The automotive industry in 1946 obtained almost 13 per cent of total finished steel production, but a substantial part of this still remains in manufacturers' plants as unbalanced inventories. There seems every reason to believe that the distribution of finished steel in 1947 will follow the same percentage figures as in 1939 and 1946. A rough presentation of these percentage figures are as follows: Agriculture, 3.5 per cent; automotive, 14 per cent; construction and maintenance, 16 per cent; containers, 9 per cent; machinery and tools, 6 per cent; oil, gas and mining, 4 per cent; pressing, forming and stamping, 6.5 per cent; railroads, 9 per cent; exports, 7.5 per cent; miscellaneous, 24.5 per cent.

PIG IRON AND STEEL OUTPUT IN NET TONS

Year	Pig Iron	Steel
1946..........	45,450,000*	65,900,000*
1945..........	54,919,000	79,391,000
1944..........	61,939,000	89,642,000
1943..........	62,769,947	88,836,366
1942..........	60,903,304	86,031,931
1941..........	56,686,604	82,839,259
1940..........	47,398,529	66,982,686
1939..........	35,677,097	52,798,714
1938..........	21,460,164	31,751,990
1937..........	41,582,550	56,636,945
1936..........	34,752,689	53,499,999
1935..........	23,937,423	38,183,705
1934..........	18,075,202	29,181,924
1933..........	14,947,074	26,020,229
1932..........	9,835,227	15,322,901
1931..........	20,637,516	29,058,961
1930..........	35,562,429	45,583,421
1929..........	47,727,661	63,205,490
1925..........	41,104,634	50,840,747
1920..........	41,357,105	47,188,886

* Estimated.

ALLOY STEEL OUTPUT

(Thousands of Net Tons)

	Open Hearth	Per Cent of Total	Electric	Per Cent of Total	Total
1939............	2,459	76.7	749	23.3	3,208
1940............	3,675	74.0	1,288	26.0	4,963
1941............	5,740	70.1	2,462	30.0	8,202
1942............	8,133	70.6	3,393	29.4	11,526
1943............	9,217	70.1	3,933	29.9	13,150
1944............	7,010	65.9	3,623	34.1	10,633
1945............	5,847	67.6	2,801	32.4	8,648
1946............	4,398	73.0	1,637	27.0	6,025

TOTAL STEEL OUTPUT

(Thousands of Net Tons)

	Alloy	Per Cent of Total	Carbon	Per Cent of Total	Total
1939	3,212	6.1	49,587	93.9	52,799
1940	4,966	7.4	62,017	92.6	66,983
1941	8,206	10.0	74,633	90.0	82,839
1942	11,526	13.4	74,506	86.6	86,032
1943	13,150	14.9	75,235	85.1	88,385
1944	10,633	11.9	79,009	88.1	89,642
1945	8,648	10.9	70,743	89.1	79,391
1946	6,025	9.1	59,875	90.9	65,900

EXCESS DEMAND FOR STEEL

Three or four good months of steel operations at close to 90 per cent of capacity, with some increase in worker productivity either by better management or by greater worker output, would clean up the excess demand which has been hanging over the steel market since the war ended. By that time it would be seen whether the industry can operate at high rates continuously and whether the consumer demand which has been on paper for some time actually exists in fact or in the minds of the market experts. This much needed test can not be made, however, if the steel industry in particular must go through a wage-demand-strike-wage-increase-price-increase cycle every year. For that reason alone it must yet be proved that "prosperity is just around the corner."

NON-FERROUS METALS

By Walter Renton Ingalls
Consulting Engineer, New York

GENERAL

At the end of the war with Japan it was expected that use of the non-ferrous metals would be diverted quickly to pre-war channels of consumption in which there was great need to restore the natural flow, such channels being the building of houses, manufacture of motor vehicles, resumption of suspended construction of electric light and power plant, telephone plant, rehabilitation of railways, and resumption of manufacture of numerous electrical apparatus for industrial and household use. For economic reasons these resumptions did not begin as expected, strikes of labor being an obstruction among other things, and such flow of the metals as began was largely to fill the pipelines of industrial manufacture. The year 1946 began with such obstructions, which spread widely through major industries, while OPA, in some persons' opinion, offered for political reasons interferences with the law of supply and demand. Not until June was there a settlement with labor, which followed the granting of an increase of 18½c. per hour in wages and an allowance of compensating increases in prices by OPA.

EFFECT OF STRIKES ON PRODUCTION

Numerous events of 1946 were common to the major non-ferrous metals, either in their occurrence or in their effect. Strikes curtailed production in the United States and also in Mexico, Chile, and Rhodesia, and led to serious shortage of supplies of copper and lead. Settlement of the strikes in the United States, by granting increase in wages, raised the cost of production, which was further increased by the higher cost of coal and railway carriage used in production. The advance in freight rates July 1 added $1 per ton to the price of lead and zinc in New York as compared with St. Louis, and similarly the rates on copper, lead, and zinc from the Far West. Production of copper, lead and zinc in the United States continued under subsidy, which ceased with the expiration of OPA, June 30, but was restored with the revival of OPA, July 26.

GOVERNMENTAL INTERFERENCES

When OPA expired, June 30, its ceiling prices were 14⅜c. for copper, delivered in Connecticut; 8.25c. for lead, New York; and 8.25c. for spelter, St. Louis. On July 2-3 American producers raised their prices for lead to 9½c., and for spelter to 9½c., these being in harmony with free prices ex U. S. A. On July 26 OPA, having been revived, "rolled back" the prices to those of June 30, and kept them there while prices ex U. S. A. continued to rise.

By presidential order, Nov. 10, controls of all prices, except in respect of rents, rice, and sugar, were abolished forthwith. On Nov. 11 the price for lead was raised to 10½c. New York (10.35c. East St. Louis) and the price for zinc to 10½c. East St. Louis. On Nov. 13 the price for copper was raised to 17½c., delivered Connecticut.

These advances brought domestic prices in harmony with world prices, each of these metals still coming into U. S. A., duty free, when imported by the Government, which in respect of copper and lead could legally be done up to March 31, 1947. Nov. 18-19 all restrictions on imports of lead and copper were removed, and the Government terminated its purchasing of foreign copper, effective immediately. This brought into effect the import duty of 1¹⁄₁₆c. per pound on lead and 4c. per pound on copper, which the Government had not been obliged to pay. While price controls were thus removed, various other controls remained, especially in respect of allocation of supplies by the Civilian Production Administration and otherwise.

ABSORPTION OF SURPLUS ACCUMULATIONS

Prior to the end of the war there were fears in respect of large quantities of military scrap overhanging the markets. During 1946, such fears were dispelled. Through diminished production by strikes and otherwise, it became necessary to draw heavily on governmental stocks. Up to the end of 1945, a grand total of about 305,000 tons of fired cartridge cases was returned into consumption in the United States. During 1946 this reflux practically ended. The British Government, in great need for copper, collected 165,000 tons of empty cartridge cases and contracted with American refiners (with a small Canadian participation) to beneficiate this material and return to Great Britain the refined copper obtained from it. Receipts of this material were to begin in November.

ALUMINUM

Before the end of 1945 most of the government-owned plants for the production of ingot aluminum had become idle, and many of them had already been dismantled. This industry thus passed into the hands of the Aluminum Company of America (Alcoa), Reynolds Metals Co., and Kaiser-Fraser Corporation, which acquired a government-built plant at Spokane, Wash. The plant at Jones Mill, Ark. was acquired by the Reynolds Metals Co., as was also the Hurricane Creek alumina plant, Alcoa having agreed to the use of its plant on a royalty basis. Some of the rolling mills were subsequently acquired by Alcoa. Efforts to liquidate the government-owned plant otherwise came to nothing, and the industry thus settled down on a commercial competitive basis among the three big companies.

According to George R. Gibbons, senior vice president of Alcoa, the economical capacity in the United States for the production of ingot aluminum is now about 600,000 tons per annum, which is about half of what was established during the war. Of the present economical capacity, Alcoa has about 235,000 tons, the remainder being divided between Reynolds and Kaiser, the latter holding only a minor part.

Of the fabricating plants operating for the Government by Alcoa during the war, several have been sold or leased to Reynolds and Kaiser. Alcoa has been able to obtain only the extrusion plant at Cressona, Pa., the Government having refused Alcoa bids for other plants.

The year 1945 began with a large stock of aluminum, MRC (Metals Reserve Corp.) alone having about 185,000 tons of primary ingot, a substantial part of which was in Canada, a portion of the RFC (Reconstruction Finance Corp.) purchase of 37,500 tons in 1945 having been allowed to remain there. However, no signs of weakness developed in the American market, and the producers entered courageously into campaigns for increasing the use of aluminum, especially in directions where the saving of weight would be attractive, *e.g.*, for the superstructures of railway cars, ships, motor vehicles, etc. A two-months strike at Alcoa, Tenn., surprisingly produced a shortage of immediate supply, and on May 20, 1946, MRC on recommendation of CPA allowed 35,000 tons of aluminum ingot to be withdrawn from stocks. On July 1 application for withdrawal of 25,000 tons additional was allowed. This reduced government holdings to about 125,000 tons of primary ingot as of June 30, 1946. By the end of September those holdings had been further reduced to about 92,000 tons.

Production in 1946 was about 420,000 tons, attaining about 50,000 tons per month, or capacity rate, toward the end of the year. Aluminum sheet was extensively introduced into housing construction, a rather new channel of consumption, at least on so large a scale. NHA (National Housing Agency) expects to require 200,000 tons of aluminum in its housing program for 1947.

The price for ingot aluminum, 99 per cent pure, was 15c. per pound during 1942-45, and this price continued unchanged during 1946. The price in Canada during 1945 was 15c. per pound f.o.b. Arvida, Quebec, which was equivalent to 16c. per pound delivered to domestic consumers. Aluminum Co. of Canada, May 1, 1946, reduced the price to 15c. delivered in Canada, bringing the Canadian price about in line with the American price after allowing for the discount of Canadian dollars and adding the import duty of 3c. per pound. The export price was reduced to 13¼c., Canadian, f.a.s. Atlantic ports, this being equal to the British price of £67, equal to 12.04c. American, which was made on April 10, 1946.

COPPER

Strikes began to close the copper mines in the United States in January 1946, and were not settled until nearly the end of June. In the meanwhile there were strikes in the smelteries, refineries, brass mills, and wire and cable mills. Settlement was eventually arranged by granting an increase of 18½c. per hour in wages, and OPA allowed an advance in the ceiling price for copper from 12c. to 14⅜c. but only to those who agreed to pay the wage increase. This limitation was abolished when OPA was revived.

The effect of the interruption by strikes was to reduce copper production of mines in the United States to 235,000 tons in the first semester of 1946 compared with an expectation of 500,000 at the beginning of the year.

In the meanwhile deliveries ex fabricating mills averaged about 90,000 tons per month, the deficit being supplied by drafts from OMR (Office of Metals Reserves) stocks and by importations from Chile. The total visible stock of copper in this country at the beginning of 1946 was 1,305,000 tons, not including substantial stocks at arsenals of the Army. Of the visible stock, OMR had 476,000 tons. The remainder was largely metal in process, which is substantially a constant for conduct of the industry. By the end of November, OMR stock had been reduced to 117,000 tons.

Deliveries ex mills, which will be about 1,250,000 tons in 1946, were largely to fill depleted channels leading to end-use, for the latter was curtailed by strikes in automobile manufacturing and in other copper consuming industries.

Copper production was curtailed substantially in Chile, where also there were labor troubles, but was well maintained in Africa although shortage of coal and of water power were retarding in both Katanga and Rhodesia. However, a crippling strike in Rhodesia in August and a new strike in Chile in September were further deprivations.

In the second quarter of 1946, MRC purchased a large tonnage of Chilean copper at 11⅞c. f.o.b. Chilean ports, equivalent to 12½c., New York, and of course this copper was duty free. For third quarter delivery 50,000 tons were bought at 15¾c. f.o.b. Chilean ports, and for fourth quarter delivery 35,000 tons at 15⅞c., equivalent to 16½c., New York, which was about in harmony with the world price. By the beginning of October, the world price, or the free price, for copper had become firmly established at 17¼c. f.a.s. New York. Upon termination of purchasing of foreign copper by the U. S. Government, American producers raised their price to 19½c., delivered in Connecticut, the price for foreign copper for export being then about 18c. The differential represented protection by the 4c. duty. At the end of December copper was firmly at 19¾c. f.a.s. New York.

LEAD

Production of lead in the United States in the first half of 1946 was handicapped by OPA price restrictions, by shortage of labor, and by a strike that closed all of the plants of the American Smelting and Refining Co. during the larger part of the semester. The production of refined lead was thus reduced from 51,000 tons in January to 18,500 in June. American lead consumption consequently had to be supplied by imports from Canada and Mexico and by drains from stocks of OMR; and also from invisible stocks in the yards and warehouses of consumers, *i.e.*, corroders, battery manufacturers, etc. In so doing, all stocks were dangerously reduced. The situation would have been much worse had it not been for the production of secondary smelters remaining steady at about 20,000 tons per month, their supply being chiefly battery scrap which is a run-around material, *i.e.*, about 300,000 tons of lead annually goes into storage batteries in this country and in less than two years 75 per cent of it, or more, returns normally as scrap for reproduction as refined lead.

At the beginning of 1946 stocks of refined lead at refineries and in warehouses for the account of MRC aggregated 103,400 tons. At the middle of 1946 these stocks had been reduced to 55,000 tons. At the end of September there were 61,000 tons.

Shortage of lead was also experienced outside the United States, especially in Great Britain, where the government prohibited exports in an order at about the middle of the year. Grave fears were expressed in respect of the outlook for this metal. However, it is to be observed that production in Mexico was curtailed by the strike in the early part of 1946 following which its production increased substantially. The production in Canada was maintained steadily at a little better than the rate of 1945. The Australian producers complained of labor troubles, governmental interference, shortage of labor, and the exigency of catching up with development work neglected during the war. Of course, that is a troublesome condition existing among all of the great lead producing countries, which are the United States, Canada, Mexico, and Australia. Also it is to be remarked that an annual production of 80,000 tons a year has been lost through the devastation of the Burma mine prior to the Japanese occupation. Moreover, the Trepca mines in Yugoslavia, with an annual pre-war production of 75,000 tons, have been nationalized and their present production, whatever it may be, has been diverted to Russia. Furthermore, the mines of Germany used to afford about 100,000 tons of lead a year, but some of them have now passed to Polish ownership and some are in the Russian occupation, and production of what remains plays no part in international economy either as to supply or demand. On the other hand, in the early part of 1946, lead production was resumed by Mt. Isa in Western Australia with expectation of quickly regaining its pre-war annual rate of 40,000 tons.

The ceiling price for lead established as 6.5c. New York and 6.35c. St. Louis in February 1942 remained unchanged during 1943-45. However, the shortage in lead supply began to become acute early in 1946 and on Jan. 16, the U. S. Commercial Co. (subsidiary of MRC) agreed to pay 7c. per pound for foreign refined lead delivered in U. S. A., the duty of 1$\frac{1}{16}$c. per pound to be absorbed by the Government, as also the added cost of ½c. per pound when this lead should be sold to domestic consumers at OPA ceiling price of 6.5c. The foreign market having thus started to move upward, OPA on May 29 raised the ceiling price for lead to 8.25c. New York. Thenceforward the world price, or free price, continued to advance and at the beginning of October the U. S. Government bought Mexican lead for fourth quarter delivery at 10¼c., Gulf ports.

Upon removal of restrictions on private imports of lead the price advanced to 11.8c. New York and 11.65c. St. Louis, and at the middle of December rose to 12.55 and 12.35 respectively.

TIN

At the beginning of 1946 there were 91,623 tons of tin in stock in the United States, including pig tin and the recoverable tin content of concentrate and government stock and private stocks. There were also 33,200 tons of tin in stock in the United Kingdom. A commission sent from Washington to survey the situation found that following V-J Day there was a total of about 41,000 tons in the Orient, distributed through Malaya, Siam, Banka, and Billiton, and including 10,000 tons of pig tin in Japan. The poor condition of the tin mines of the Orient was believed by John J. Croston, head of this commission, to limit production in 1947 to 80,000 tons, and it was thought that even in 1948-49 it might be under the rate of the pre-war basis. British authorities were more optimistic. The British companies operating the great smelteries at Singapore and Penang found that they had not been badly damaged, and Penang was returned into operation on Apr. 6, 1946.

American contracts with Bolivian producers having expired, negotiations continued during the first half of 1946, and it was finally agreed on Aug. 14 that RFC would settle for Bolivian ores on the basis of 62½c. per pound and that, if deliveries during the year should exceed 17,600 metric tons, a production bonus of 1c. plus a smelting bonus of 1½c. would be granted for the first half of the year retroactively to Jan. 1, and a bonus of 3c. plus 1½c. for the second half of 1946. This made the buying price come to 65c. for the first half of 1946 and 67c. for the second half, these being the prices for tin in ore, less charges for freight and smelting.

Production of tin by the Longhorn smeltery (Texas City) was 23,167 tons in the first half of 1946, and having subsequently continued at about the same rate the year's production will be about 46,000 tons against 40,591 tons in 1945. This production is derived largely from ore imported from Bolivia.

With some imports of pig tin, plus the production by smelting in this country, and with curtailed consumption for solder, foil, etc., and the saving effected by the introduction of electroplating, the situation of tin in the United States has not been troublesome. It is recognized, of course, that the situation is abnormal in that the smelting of tin ore in Texas is a subsidized production.

The foreign tin supply came under the control of what became known as the Combined Tin Committee (comprising representatives of the United States, United Kingdom, France, Belgium and Holland). Out of supplies becoming available in the Orient and elsewhere, this committee allocated 25,000 tons in the first half of 1946, of which 9,000 tons came to this country, and 18,000 in the second half, of which 6,400 tons came to the United States.

At the International Tin Conference in London, which ended Oct. 11, it was estimated that world's production of tin in 1946 would be 94,000 tons against consumption of 137,000. Production in 1947 is expected to be 142,000, but a rate of 200,000 will not be reached until sometime in 1949.

The price for tin of 99 to 99.75 per cent grade was held by the British Ministry of Supply at £300. On Sept. 26, this price was raised to £380½, equivalent to 68.37c. per pound. Tin of very high grade was allowed a premium of £4.

The price for tin in this country was kept at 52c. for high grade (99.8 per cent and higher) although in the course of 1946 this was exceeded in the free market, and in the fourth quarter was nearly 18c. per lb. below the established world value. When OPA price restrictions were abolished, Nov. 10, the price for tin in the United States became 70c. per lb.

ZINC

The production of zinc as spelter in this country attained a maximum of 942,000 tons, since when it has been waning, and at the beginning of 1946 the rate was about 63,000 tons per month. Besides the production as spelter, there is a large production—approximately 140,000 tons a year—in oxide, lithopone, etc. directly from ore which also has been waning, but not so much as the production of spelter. Production of the latter is derived extensively from imported ores. The supply of zinc for all purposes from domestic ore was 798,000 tons in 1941. In 1945, it was only 643,000 tons, and in 1946 the monthly rate dwindled further. In order to support production during the war, a large part of the domestic mining industry was subsidized, which continued during 1946.

The stock of slab zinc at metallurgical works, in transit to consumers and at the plants of consumers, was 351,000 tons at the beginning of 1946 and 366,000 tons at the middle of the year. Of the stock at the middle of 1946, about 222,000 tons belonged to OMR. Not until late in the year was any of this released for domestic consumption. At the end of October, the OMR stock was 182,000 tons.

At the beginning of 1946, MRC had about 350,000 tons of zinc in ore, estimated as recoverable, in stocks stored partly in the United States and partly abroad. During the first half of 1946 supplies, including some of this stock, were brought to this country on a large scale from Canada, Newfoundland, Mexico, Argentina, Bolivia, and Peru. There were also the stocks owned by American smelters, and also there were substantial stocks at originating mills in Argentina, Australia, Canada, Mexico, etc., but these were largely of the nature of normal reserves.

Of the production (715,800 tons) of spelter in the United States in 1944, there were 443,790 tons subsidized, making the cost of all U. S. spelter come to 11.04c. In the first half of 1945 the total cost was 11.12c. No later figures have been given officially, but the cost in 1946 was higher.

With the large stock of spelter on hand, and available in ore not yet smelted, the statistical position of zinc was apparently easy. However, there were unbalances among the several kinds of the metal which led to some discomfort.

XII. MINERAL INDUSTRIES

PETROLEUM

By Robert E. Allen
Director of Information, American Petroleum Institute

PETROLEUM IN PEACETIME

Freed from the insatiable demands of global war and from the restrictions of war, the American petroleum industry in 1946 staged a tremendous resurgence back to its peacetime role as a pre-eminent leader in the country's development. Estimates made at the beginning of the year appeared to indicate a considerably lessened national and world demand for petroleum products resulting from a greatly reduced military demand without a compensating increase in civilian demand. The fallacy of this view soon became apparent when the pent-up urge to travel by train, airplane, automobile, and ship began to manifest itself, and when the conversion and reconversion of homes and factories from other fuels to fuel oil and natural gas were limited only by the difficulty in obtaining new equipment. The end result was a new record of petroleum production and consumption, not only in the United States but in the world. More oil and gas were produced than ever before, and more were consumed. At the same time, a good start was made toward rebuilding the war-depleted working stocks of petroleum and its products.

Despite the prospect that atomic energy will become a source of power in future years, the current trend of petroleum demand indicates that requirements for this source of mobility, heat, and power will increase by 50 per cent in the first ten post-war years as it did in the decade before 1946. There is plenty of oil in the world to supply this demand for a long time, though the foreign sources of supply are increasing at a greater rate than are those within the United States. Also the rate of production is increasing more rapidly abroad than in the United States. Of the 96,000,000 barrels of oil produced in the world in 1946, only about 20,000,000 barrels were produced in the United States. Even so, the United States, with only about one-third of known petroleum reserves of the world, again produced 60 per cent of the world's oil.

U. S. PETROLEUM RESERVES

The known petroleum reserves of the United States continue to keep pace with the steadily increasing demand. Obviously, this can not be for-

TABLE I

WORLD PRODUCTION OF CRUDE OIL

(thousands of barrels)

Year	United States	Per Cent	Rest of World	Per Cent	Total World
1936	1,099,687	61	691,853	39	1,791,540
1937	1,279,160	63	760,071	37	2,039,231
1938	1,214,355	61	773,686	39	1,988,041
1939	1,264,962	61	821,198	39	2,086,160
1940	1,353,214	63	790,836[1]	37	2,144,050
1941	1,402,228	63	819,002[1]	37	2,221,230
1942	1,386,645	67	694,784[1]	33	2,081,429
1943	1,505,613	67	727,936[1]	33	2,233,549
1944	1,677,753[2]	64	939,321[1]	36	2,617,074[2]
1945	1,712,000[2]	61	1,080,000[1]	39	2,792,000[2]
1946	1,731,889[2]	60	1,156,685[1]	40	2,888,574[2]

[1] Approximate production.
[2] Preliminary, subject to revision.

TABLE II

UNITED STATES PETROLEUM PRODUCTION

(thousands of barrels)

	Crude Oil	Natural Gasoline, etc.[1]	Total Liquid Petroleum	Natural Gas (millions of cu. ft.)
1936	1,099,687	42,770	1,142,457	2,644,835
1937	1,279,160	49,177	1,328,337	3,032,410
1938	1,214,355	51,347	1,265,702	3,048,200
1939	1,264,962	51,650	1,316,612	3,333,500
1940	1,353,214	55,700	1,408,914	3,694,100
1941	1,402,228	80,855	1,483,083	4,103,500
1942	1,386,645	83,322	1,469,967	4,453,900
1943	1,505,613	87,716	1,593,329	4,942,560
1944	1,677,904	100,046	1,777,950	4,350,000[2]
1945	1,711,103	111,274	1,822,377	4,820,000[2]
1946[2]	1,731,889	114,166	1,846,055	5,454,000[2]
11 Year Total	15,626,760	828,023	16,454,783	43,877,005
Total Prior	17,595,040	537,063	18,132,103	39,456,460
1859–1946 Total	33,221,800	1,365,086	34,586,886	83,333,465

[1] Natural Gasoline etc., includes related products such as liquified petroleum gases, naphthas and other liquid hydrocarbons, recovered from natural gas.

[2] Preliminary, subject to revision.

ever true, because oil discovered and produced depletes the future supply, despite the fact that petroleum is still originating and accumulating in the ocean-floor sediments of the seas. However, the oil that is now being used represents the slow accumulation of perhaps 200,000,000 years, compared with which our 87-year-old oil age is young indeed.

Petroleum, which includes the gaseous, liquid, and solid hydrocarbons of natural origin, is slowly but steadily changing in aspect. As the wells of the United States become deeper, their production trends more toward the lighter hydrocarbons such as natural gas and the crude oils rich in distillates and gasoline. Though such deep oilfields cost more to find and produce, their product is more valuable; a higher percentage of recovery may be obtained by proper practice, and greater efficiency of operation may be attained.

During 1946, much of the technological progress of petroleum was in the general direction of lighter hydrocarbon utilization. As the secrets of the scientists of oil-starved Germany became available they were combined with the knowledge of our own petroleum technologists, and improved methods of converting gaseous petroleum into heavier products such as gasoline were perfected. These methods, applied to part of our great natural gas reserves, will add billions of barrels to the supply of liquid petroleums in greatest demand.

RESEARCH IN PRODUCTS AND METHODS

At the same time, the U. S. Bureau of Mines continued its active research into the production of synthetic liquid petroleum from our great deposits of coal and oil shale, and research into the further conversion of heavy oils into lighter petroleum products by various catalytic cracking methods went on unabated in the laboratories of most of the larger oil companies.

All this research is directed at maintaining far into the future the supply of the legion petroleum products which are now required in daily life. About 5,400 different direct products of petroleum are now used as such, and the number of consumer products containing petroleum products is virtually beyond estimate. The petroleum industry is unceasing in its research into new and better products and methods. When atomic energy becomes a commercial reality, it will

TABLE III

QUARTER CENTURY OF U. S. PETROLEUM PROGRESS

	1921	1946[1]	Per Cent Increase
Oil Producing States	19	26	368
Deepest Well	7,579 ft.	16,693 ft.	119.9
Producing Oil Wells	274,500	244,286	54.5
Producing Gas Wells	43,900	65,000	48.1
Crude Oil Production (barrels)	472,183,000	1,731,889,000	266.8
Natural Gasoline Production (barrels)	10,713,000	115,705,000	980.0
Total Liquid Petroleum (barrels)	484,244,000	1,846,352,500	281.3
Natural Gas Production (mcf) (from oil and gas wells)	724,052,000	5,454,400,000	653.3
Known Crude Oil Reserves (barrels)	7,800,000,000	21,287,673,000	172.9
Oil Reserve/Production Rates	16.52	12.3	
Known Natural Gas Reserves (mcf) (natural gas fields only)	11,500,000,000	144,289,552,000	861.9
Gas Reserve/Production Ratio	15.88	26.5	
Motor Fuel Produced (barrels)	122,704,000	771,300,000	528.6
Average Price of Crude Oil (barrels)	$1.725	$1.41	
Average Price of Gasoline (ex tax)	$ .2611	$ .1469	

[1] 1946 Data preliminary, subject to revision.

doubtless be used by the petroleum industry in new processes for making new products. For example, products such as cyclohexane, hexamethyl ethane, benzene hexachloride, and spiropentane, which have been laboratory specimens for some time, are now coming into their own as uses are found for them.

SEARCH FOR OIL AND GAS

Despite the research into other sources of liquid petroleum, the search for oil and gas in the United States continues vigorously. A slight increase in the price of crude oil during 1946 and the greater availability of materials and equipment stimulated broadened exploratory activities with the net result that the nominal reserves estimated from new discoveries, plus the reserves from older fields proved by development, again amounted to more than the record quantity of oil produced, and the nation again had more known oil in its natural reservoirs than it had at the beginning of the year. Known reserves are inventoried each year by the Reserves Committee of the American Petroleum Institute.

PETROLEUM TRENDS

Petroleum maintains a relatively unchanged pattern of organization and operation. This pattern has been determined through the years by public requirements and by unceasing competition. The petroleum industry was long ago forced into its familiar integrated structure by the competitive forces that have forced every possible economy and have resulted in steadily declining prices for better petroleum products and greater service.

Small companies have found that the integration of their producing, transporting, processing, and distributing functions is as necessary for them as it is for larger companies. Size is not an index of integration, or *vice versa,* for integrated companies range from the very small to the very large. The most notable case of integration in 1946 was that of a midwest cooperative which first acquired refining facilities to assure its patrons of a dependable supply of petroleum products and then found it wise to acquire oil wells and transportation facilities in sufficient number to assure its refineries of a supply of crude oil. The process continues and the result is better service to petroleum consumers.

In 1946, the Senate special committee investigating petroleum resources, made a thorough study of the American petroleum industry. Concerned

TABLE IV

U. S. SUPPLY AND DEMAND OF ALL OILS

(thousands of barrels)

	Production[1]	Imports	Exports	Closing Stocks	Domestic Demand
1936	1,144,959	57,104	132,369	519,229	1,092,379
1937	1,331,127	57,157	173,311	564,997	1,169,205
1938	1,267,466	54,308	194,145	555,921	1,136,705
				567,703[2]	
1939	1,319,110	59,060	189,559	525,838	1,230,486
1940	1,412,081	83,751	130,466	564,584	1,326,620
				563,277[2]	
1941	1,486,518	97,142	108,830	552,328	1,485,779
				556,425[2]	
1942	1,472,364	35,966	116,907	497,940	1,449,908
1943	1,595,729	63,412	149,957	485,698	1,521,426
				483,307[2]	
1944	1,780,350	92,256	207,616	477,089	1,671,263
1945	1,825,257	113,373	184,273	463,579	1,767,867
1946[3]	1,845,384	135,269	158,081	515,000	1,768,973

[1] Includes production of all raw materials, that is, crude petroleum, natural gasoline, liquefied petroleum gases, and benzol.
[2] New basis for comparison with succeeding year.
[3] Preliminary, subject to revision.

principally with petroleum reserves and petroleum trends, the report of the committee contained the following pertinent excerpts: "It was United States oil that made this country the industrial leader of the world." "The best evidence available would indicate that the land area of Russia is a greater potential source of petroleum than continental United States." "This discovery, production, refining and distribution of petroleum and its products are operations too complex and costly to be feasible for individual enterprise, but may be conducted efficiently and profitably only by corporation organizations." "It should not be assumed that all future warfare will occur beyond our boundaries. If invaded we would naturally rely first upon local reserves." "Nothing should be done to weaken the capacity of domestic reserves and every possible step should be taken both to increase these reserves and continuously to develop them to such a degree as would occasion no regret in the event of war."

INTERNATIONAL ASPECTS

The steady and irresistible entrance of petroleum in world affairs has been on such a vast scale as to be understood only by an observer of near-infinite perspective. The dominance of the United States petroleum-wise is best illustrated by pointing out that our use of petroleum products amounts to 367 gallons per person annually, while the corresponding figure for the entire world is only 37 gallons. For Europe, the consumption averages 31 gallons per person per year, but in Asia it is only four gallons.

This outstanding petroleum dominance of the United States is at once a credit and a challenge to the petroleum industry. It is a story of far-flung exploration, of tremendous expense and effort, of constant adjustment to meet ever-changing conditions, and of vision, initiative, and willingness to venture that our nation and the world may not want for oil.

American oil men and American oil-field equipment operated in widely remote parts of the world in 1946. Next to the United States and Canada, the greatest concentration of American skill and tools was in Colombia and Venezuela. The fabulous oil countries of Iran, Iraq, Saudi Arabia, and Kuwait were other centers of great activity and development as new production records were established in 1946 though producing only a fraction of the oil there available.

The petroleum reserves of Saudi Arabia are known to be so great that two more of the great oil companies of America felt impelled to acquire substantial interests in the Arabian American Petroleum Co. which holds a concession on most of the probable oil territory in that country. This will give five large American companies the bulk of the production there, and plans are already far advanced to build two great pipelines from the oil fields to Mediterranean ports. When these pipelines and all auxiliary installations are completed it is probable that production from the Persian Gulf region will soar to more than 1,000,000 barrels daily. This production will supply Europe, Africa, Australia, and Asia with more oil than they have ever had before and, to the extent that it supplants Venezuelan oil on the European market, will make more oil available for the United States if our own wells can not produce oil at a rate sufficient to meet demand.

This subject of efficient production rates recalls the fact that had it not been for the practice of improved production techniques and sound measures of conservation during pre-war years we would not have had the 500,000 barrels daily of reserve capacity that we needed to win the war. Without this reserve capacity, either the war would have been prolonged or rationing of unbelievable severity on civilian consumption would have been imposed. The value and importance of conservation as an essential part of petroleum economy is obvious.

Many of the men who aided in producing the flood of oil that made victory certain are now working far from the scenes of wartime activities. Some are in northern Alaska searching for the oil deposits of the Fourth Naval Petroleum Reserve; some are working in bleak Tierra del Fuego where they have found the first Chilean oil field; others are in southern France helping to develop what promises to be a large gas-distillate field; still others are in New Guinea, Nigeria, Egypt, Mozambique, Brazil, and China. All are searching for the oil of tomorrow.

HIGHLIGHTS IN U. S. OIL

Nearly 3,000 more wells were drilled in 1946 than in 1945. Although 29,228 wells of all kinds were drilled, the number falls far short of the record 33,075 wells of 1937, but represents a gain of nearly 10,000 wells over the war low of 19,431 in 1943 when every ton of steel had to yield the utmost possible oil.

The number of dry, unproductive wells drilled in 1946 soared to 8,050, a new record which is indicative of the vigor with which the search for oil is being conducted and the risks which attend it.

The 15,851 oil wells completed in 1946 fell far below the average of pre-war years, but the 3,090 gas wells completed were a new record, indicating the growing importance of natural gas in the petroleum economy of the country.

TABLE V

WELLS COMPLETED IN THE UNITED STATES

Year	Oil	Gas	Dry	Service	Total
1936	17,800	2,070	5,297	723	25,890
1937	22,386	2,676	6,560	1,453	33,075
1938	18,598	2,066	6,141	688	27,493
1939	17,625	2,198	6,474	1,420	27,717
1940	19,125	2,352	6,617	1,947	30,041
1941	19,552	3,007	7,128	2,366	32,053
1942	10,492	2,068	5,504	1,760	19,824
1943	9,717	1,782	6.385	1,547	19,431
1944	13,028	3,067	7,009	2,156	25,260
1945	14,297	2,898	7,471	2,209	26,875
1946[1]	15,851	3,090	8,050	2,237	29,228

[1] Preliminary, subject to revision.

At the end of the year, the 226,000,000 barrels of crude oil in storage constituted approximately 46 days of supply, as compared with 48 days at the end of 1944 and 95 days at the end of 1937. In terms of days supply of crude oil in storage, these figures indicate what the war did to the relative supply of crude oil in surface storage.

TABLE VI

U. S. CRUDE OIL IN STORAGE[1]

(barrels of 42 gallons)

1936	288,579,000
1937	306,826,000
	305,833,000[2]
1938	274,958,000
	274,165,000[2]
1939	239,978,000
1940	264,709,000
1941	247,499,000
1942	234,889,000
1943	243,506,000
	242,132,000[2]
1944	220,862,000
	220,663,000[2]
1945	218,763,000
1946[3]	225,995,000

[1] Excludes heavy grades in California.
[2] New basis to compare with succeeding year.
[3] Preliminary, subject to revision.

During the closing years of the war a variable subsidy was paid to the marginal crude oil producers of the country. This subsidy was designed to maintain the production and prevent the abandonment of high-cost wells whose production was necessary to hold U. S. production at the required levels. With the general abandonment of wartime controls, all crude oil prices gradually reached the competitive levels necessary to maintain the production required to meet unprecedented peacetime demands.

While the capacity of U. S. refineries remained virtually unchanged during the war years, their effective capacity for higher quality products increased many times. Thus, the refinery capacity of the country today can be measured in terms of 100 octane gasoline, finer lubricants, and better fuels than could be produced in only experimental quantities before the war. With a current capacity of approximately 5,300,000 barrels daily, the refineries of the country continue to maintain the bare working margin over demand that practical operating procedure requires.

TABLE VII

CRUDE OIL PRICES

(per barrel of 36 deg., API gravity Oklahoma–Kansas Oil)

Year	High	Low
1934	$1.00	1.00
1935	1.00	1.00
1936	1.10	1.00
1937	1.22	1.10
1938	1.22	1.02
1939	1.02	1.02
1940	1.02	1.02
1941	1.17	1.02
1942	1.17	1.17
1943	1.17	1.17
1944	1.17	1.17
1945	1.17[1]	1.17
1946	1.62	1.17[1]

[1] Exclusive of differential and variable subsidy payments effective 1945.

TABLE VIII

REFINERY RUNS OF CRUDE OIL

(barrels of 42 gallons)

1936	1,068,570,000
1937	1,183,440,000
1938	1,165,015,000
1939	1,237,840,000
1940	1,294,162,000
1941	1,409,192,000
1942	1,334,103,000
1943	1,429,738,000
1944	1,665,684,000
1945	1,719,534,000
1946[1]	1,727,000,000

[1] Preliminary, subject to revision.

Although the production of motor fuel declined slightly during the year as did the production of residual fuel oil, this drop was nearly compensated by the increased production of gas oil and distillates which continued to enjoy a sensational increase in demand. Whereas gasoline and heavy fuel oil are essentially single-purpose products, the demand for the middle dis-

TABLE IX

CAPACITY OF U. S. REFINERIES

(operating—shut-down and building as of Jan. 1)

Year	Capacity[1]
1935	4,072,400
1936	4,163,946
1937	4,376,081
1938	4,373,701
1939	4,650,805
1940	4,721,213
1941	4,860,194
1942	4,999,000
1943	5,035,000
1944	5,150,000[2]
1945	5,330,000[2]
1946	5,288,045[2]

[1] In barrels of crude oil per day.
[2] Preliminary, subject to revision.

tillates is three-fold; namely, for Diesel fuel, domestic fuel, and catalytic charging stock. It now seems probable that, as the demand for the more valuable top products increases, there will be less and less residual oil available except from imports.

TABLE X

MOTOR FUEL PRODUCED IN UNITED STATES

(barrels of 42 gallons)

1936	516,266,000
1937	571,727,000
1938	569,162,000
1939	611,043,000
1940	616,695,000
1941	701,294,000
1942	608,900,000
1943	608,180,000
1944[1]	743,484,000
1945[1]	799,059,000
1946[1]	775,000,000

[1] Preliminary, subject to revision.

During the year, U. S. imports of petroleum increased to 135,000,000 barrels, while exports decreased to 158,000,000 barrels, thus narrowing the margin in our favorable balance of trade.

In a year marked by strikes and industrial unrest, the petroleum industry remained relatively unaffected because of its high wage standards and good working conditions. Approximately 1,250,000 persons were employed by the industry as the year ended.

SCOPE OF THE OIL INDUSTRY'S OPERATIONS

Although a group of 21 so-called "major" companies continued to be responsible for more than half of the petroleum produced and sold in this country, the total number of companies engaged in the petroleum industry remained firm at about 35,000 which includes some 13,500 producers, 500 transporters, 400 refiners, 20,000 distributors and marketers, and 600 supply and service units. With this

TABLE XII

INDEX OF WHOLESALE PRICES

(1926 = 100)
(U. S. Bureau of Labor Statistics)

Year	Crude Petroleum and Petroleum Products	All Commodities
1936	57.3	80.8
1937	60.5	86.3
1938	55.9	78.6
1939	52.2	77.1
1940	50.0	78.6
1941	57.0	87.3
1942	59.8	98.8
1943	62.5	103.1
1944	63.9	104.0
1945	63.5	105.8
1946 (Oct.)	73.1	134.1

TABLE XI

GAS AND FUEL OIL PRODUCED IN U. S. REFINERIES

(barrels of 42 gallons)

Year	Gas, Oil and Distillates	Residual Fuel Oil	Total Fuel Oil
1936	125,906,000	287,968,000	413,874,000
1937	146,706,000	312,064,000	458,770,000
1938	151,774,000	294,890,000	446,664,000
1939	161,746,000	305,944,000	467,690,000
1940	183,304,000	316,221,000	499,525,000
1941	189,177,000	342,367,000	531,544,000
1942	196,714,000	358,901,000	555,615,000
1943	211,516,000	417,306,000	628,822,000
1944	239,152,000	461,455,000	700,607,000
1945	249,224,000	469,492,000	718,716,000
1946[1]	287,500,000	428,000,000	715,500,000

[1] Preliminary, subject to revision.

TABLE XIII

ANNUAL COST OF MOTOR FUEL AND TAXES PER CONSUMER

(based on average number of motor vehicles in use each year)

Year	Annual Consumption Per Automobile (gallons)	Average Motor Fuel Cost	Average Motor Fuel Tax	Total Cost to Consumer
1927	527	$ 96.49	$14.81	$111.30
1929	593	106.27	20.75	127.02
1931	623	80.99	24.92	105.91
1933	618	76.69	33.43	110.12
1935	668	90.51	35.34	125.85
1937	705	102.86	38.07	140.93
1939	721	95.97	39.22	135.19
1940	733	93.46	41.49	134.95
1941	755	100.42	44.77	145.19
1942	625	90.38	37.31	127.69
1943	540	78.62	32.24	110.86
1944	559	81.72	33.37	115.09
1945	641	92.82	38.59	131.41
1946[1]	809	118.84	49.19	168.03

[1] Preliminary, subject to revision.

number of competitive enterprises, it is not surprising that intense rivalry prevails. Such competition, with the resulting economies and continual progress, is responsible for petroleum prices being the least inflated of all major commodity prices. According to the U. S. Bureau of Labor Statistics, the index of petroleum prices is now only 73.1 compared with the basic 1926, while the index figure of all commodities is 134.1 or more than twice that of petroleum. This index does not include gasoline taxes, which since 1926 have more than trebled to the average motorist. Despite old cars and war-worn highways, the 1946 consumption of gasoline set a new record average of 809 gallons per car, costing $118.84 plus $49.19 in taxes, a rate of more than 40 per cent.

TABLE XIV

MOTOR FUEL PRICES, TAXES, AND COSTS

Year	Average Retail Price	Local, State and Federal Taxes	Average Total Cost Per Gallon to Consumer
1920	$.2974	$.0009	$.2983
1925	.2009	.0211	.2220
1929	.1792	.0350	.2142
1933	.1241	.0541	.1782
1936	.1410	.0536	.1945
1937	.1458	.0540	.1998
1938	.1407	.0544	.1951
1939	.1331	.0544	.1875
1940	.1275	.0566	.1841
1941	.1330	.0593	.1923
1942	.1446	.0597	.2043
1943	.1456	.0597	.2053
1944	.1462	.0597	.2059
1945	.1448	.0602	.2050
1946	.1469	.0608	.2077

TABLE XV

PETROLEUM TAXES

Year	Total Taxes
1936	$1,183,147,498
1937	1,315,487,798
1938	1,286,114,473
1939	1,354,166,333
1940	1,523,693,000
1941	1,807,146,000
1942	1,786,338,797
1943	1,686,133,000
1944[1]	1,811,658,000
1945	1,902,037,000

[1] Revised.

As the year drew to a close, public interest was claimed by the prospects of converting the idle "Big Inch" pipe lines to gas carriers. These two great arteries of petroleum, which performed such outstanding war service in carrying Texas oil to the submarine-menaced Atlantic Seaboard, have been offered by the War Assets Administrator to the highest bidder, and indications are that the lines will be put into service to bring gas from Texas to New York's millions. With the installation of the necessary compressor stations, as much as 400,000,000 feet daily may be delivered to the New York area. This amount of gas is equivalent to about 16,000 tons of coal or about 70,000 barrels of oil and would provide another choice of fuels for thousands of homes and industries.

With the advent of 1947, the American petroleum industry faces a continuation of the trends that have brought great opportunities of service and great responsibilities for the continuance of that service.

PERIODICAL PUBLICATIONS

American Gas Journal
53 Park Place, New York City.
American Mineralogist
450 Ahnaip St., Menasha, Wis.
Chemical and Metallurgical Engineering
330 West 42nd Street, New York City.
Coal Age
330 West 42nd Street, New York City.
Engineering and Mining Journal
330 West 42nd Street, New York City.
Fueloil Journal
232 Madison Ave., New York City.
Iron Age
100 East 42nd Street, New York City.
Metal Finishing
11 W. 42nd St., New York City.
Metal Progress
7301 Euclid Ave., Cleveland, O.
Metals and Alloys
330 West 42nd Street, New York City.
Mining and Metallurgy
29 West 39th Street, New York City.
National Petroleum News
1213 West Third Street, Cleveland, O.
Oil and Gas Journal
211 South Cheyenne Street, Tulsa, Okla.
Oil Weekly
3301 Buffalo Drive, Houston, Tex.
Petroleum Engineer
701 Allen Building, Dallas, Tex.
Petroleum World
412 West Sixth St., Los Angeles, Calif.
Steel
Penton Publishing Co., Cleveland, O.
Steel
16 E. 43rd Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Assn. of Petroleum Geologists, Box 979, Tulsa, Okla.
American Gas Assn., 420 Lexington Ave., New York City.
American Institute of Mining & Metallurgical Engineers, 29 W. 39th St., New York City.
American Iron and Steel Institute, 350 Fifth Ave., New York City.
American Mining Congress, 841 Munsey Bldg., Washington, D. C.
American Petroleum Industries Committee, 50 W. 50th St., New York City.
American Petroleum Institute, 50 West 50th St., New York City.
American Zinc Institute, 60 E. 42nd St., New York City.

DIVISION XIII

MANUFACTURES AND TRANSPORTATION

CONDITIONS IN MANUFACTURING

By L. Seth Schnitman
Consulting Economist

GENERAL

Uncompromising chauvinism on the part of management, labor, and government alike may be set down as the cause for the stop-and-go industrial productive patterns of 1946. Here we were with a capacity to produce and market goods on a volume level never before attained, not even in wartime; here, too, with a demand that was real and a purchasing power that was unquenchable and unquestioned. Yet, as always in the past, capacity and output turned out to be two things apart.

Again we had engaged in shadow-boxing, in the costly game of rearing straw-men only to knock them down. Strikes had succeeded in costing 5,000,000 workers—about 9 per cent of the total labor force—about 113,000,000 man-days of lost work at a direct cost to them of no less than $1,250,000,000 in lost wages. Lost man-days of production in 1946 not only were three times as great as in 1945, the highest previous year of record, but also equaled the combined total for the seven years immediately preceding Pearl Harbor. Worse, were the overall effects on the economy at large which had otherwise readied itself for a speedy return to peacetime pursuits and a stable price level. Far from affording that, producers almost everywhere became involved in the vicious pastime of pricing themselves out of their markets, while all about them were consumers ready and willing to buy at a price and in numbers never before seen. What occurred to American industry in 1946, and its components, is best reflected by the index of industrial production of the Board of Governors of the Federal Reserve System.

INDEX OF INDUSTRIAL OUTPUT

For the third consecutive year now, the combined production by our mines and factories was lower, by volume, than in the preceding year. How far the 1946 index has slipped from the all-time peak level of 1943 is best seen from the progressive deterioration that has since occurred. As above defined, the shrinkage in industrial output between 1943 and 1944 amounted to slightly less than 2 per cent; between 1944 and 1945, to almost 14 per cent; and between 1945 and 1946 to about 16 per cent. The over-all loss in 1946 production from the 1943 high-water mark approximated 28 per cent.

Were this the likely end to the decline from our peak wartime industrial effort, there would be little point in laboring the causes or even mentioning them again—pernicious industrial strife, confusion as to price-wage-profits relationships, dislocations between durable and non-durable goods manufacturing, sheer speculation in commodities, securities, even real estate. These have been sufficiently sketched in reviews in this section of The American Year Book for the preceding two or three years. Yet, because these forces are still insidiously at work, it appears especially timely now to caution that further over-all retrenchment in industrial output is all but a certainty for 1947.

Despite the production cut-back since 1943, however, the output of our mines and factories in 1946 was 71 per cent higher than the annual average for the five years, 1935-1939; almost 6 per cent greater than in the highest pre-war year, 1941; about 37 per cent in excess of the total for the next highest year before Pearl Harbor, 1940; 51 per cent larger than in the third highest pre-Pearl Harbor peacetime year, 1937; and more than 55 per cent greater than in the oft-referred-to lush year, 1929. In those years the capacity of our composite industrial plant was much smaller than it is today. Were it otherwise, our economy could take a further shrinkage in output in stride and without serious repercussions. If we are rationally to avoid the despair and heartbreak of another economic breakdown, our sights must, therefore, now be trained upon newly found production potentials. More, it must somehow be contrived to provide the proper facilities for full production and hence, for full employment, a responsibility collectively resting upon management, labor, and government.

For manufacturing alone, apart from mining, the 1946 production index was almost 18 per cent lower than that for the previous year, most largely because of the work-stoppages precipitated by unparalleled management-labor disputes and disputes between warring factions within the ranks of labor itself. Even so, the 1946 volume of manufacturing output was some 77 per cent higher than the average for the five-year period, 1935-1939, against the prediction here, a year ago, that it was "likely to be at least 75 per cent higher."

DURABLE MANUFACTURES

More revealing than either the index of industrial output or that for manufacturing as a whole are the two major components of the combined index of manufacturing production, *i.e.*, the index for durable goods, and that for non-durables. The 1946 volume of durable goods production, including such items as iron and steel, machinery, automobiles, non-ferrous metals, lumber and its products, and other building materials, was 30 per cent smaller than in 1945 and almost 47 per cent below the level of 1943. Earlier year-to-year losses since 1943 were 2 per cent for 1944 and 22 per cent for 1945. Notwithstanding, the volume of durable goods produced during 1946 was 93 per cent above the annual average for the period 1935-1939. Except for 1941, the level for which it missed by only a scant 4 per cent, 1946 production of durables was far above the total for any peacetime year. To illustrate, the increase over 1940, the previous peak year, amounted to 40 per cent; the gain over 1937 output was 58 per cent; the advance over the level for 1929 amounted to 46 per cent.

But for crippling strikes in the steel, automobile, and soft coal industries, to name but a few, the 1946 production of durables would have been even farther out in front. How distorting these strikes were may be reflected in some part by the contrasts with 1945 production totals taken at half-year intervals. Thus measured, production of durables during the initial half of 1946, when strike-bound incidences were at their peak influence, was 48 per cent smaller than in the corresponding period of the previous year; for the latter half of the year, on the other hand, 1946 output was only about 2 per cent behind the corresponding total for 1945.

Even under the best of conditions, it is not likely that the first half of 1947 can turn in an output of durables as large as that shown for the initial half of 1945, though it is virtually certain that the outturn will exceed the total for the initial half of 1946. The aggressiveness with which the transcending problems inherited from the preceding year are met and solved will sizably condition the production volume for the final half of 1947. As matters stand at the opening of 1947, the decline for the first half year from the corresponding period of 1945 is likely to approximate 25 per cent while the latter half of the year is almost certain to show an even more material sloughing from the volume for the like period of 1945. Worse, output for the last half of 1947 appears destined to slip behind the volume for the final six months of 1946.

NON-DURABLE MANUFACTURES

Unlike durable goods, non-durable manufactures in 1946 were produced in practically the same high volume of the preceding year, for an all-time record for peacetime. With this performance, the year's total was within 6 per cent of the all-time high for non-durable goods production in the war year 1943. In this disparity between durables, and non-durables such as textiles and their products, leather and its manufactures, manufactured foods, and other manufactured commodities for quick consumption, lies the clue to the industrial outlook as a whole for the year 1947. It seems to say that not only was the transition from war to peace in respect to non-durables relatively painless but also that we are near the point where, for the time being at least, supplies of consumables are generally about to outrun demands, making necessary some sizable cutbacks in production. If further evidence were needed, it was rather amply afforded during the closing weeks of 1946 when sporadic though not entirely isolated or unrelated price concessions appeared to have marked the beginning of the transition from the so-called sellers' market to the buyers' market so long in eclipse. All the while, however, it should be noted that, though the production of non-durables in 1946 was some 66 per cent greater than the annual average for the five years 1935-1939, income payments to individuals in 1946 averaged about 140 per cent higher than in that same base period.

With the requirements for the military now only a shadow of what they were—their needs for food, clothing, shoes, paperboard, and countless other consumables—is it academic to ask, can the high level of income payments alone insure a sustained record-breaking level of production for non-durables under conditions that are rapidly taking on temporary aspects of satiety at the prevailing level of prices? For a possible hint to the answer, another look at the 1946 production figure for non-durable commodities is appropriate, this from the point of view of profound contrasts. The 1946 production of non-durables was 17 per cent greater than the all-time high for the entire pre-Pearl Harbor period recorded in 1941. As significantly, the 1946 total averaged 46 per cent greater than the annual volume for the five highest peacetime years of 1936, 1937, 1939, 1940, and 1941.

PRODUCTION INDEXES FOR DURABLE AND NON-DURABLE MANUFACTURES[1]

(1935–1939 Annual Average = 100)

Year	Durable	Non-durable	Ratio: Durable / Non-durable
1919	84	62	1.35
1920	93	60	1.55
1921	53	57	.93
1928	117	85	1.38
1929	132	93	1.42
1930	98	84	1.17
1931	67	79	.85
1932	41	70	.59
1933	54	79	.68
1934	65	81	.80
1935	83	90	.92
1936	108	100	1.08
1937	122	106	1.15
1938	78	95	.82
1939	109	109	1.00
1940	139	115	1.21
1941	201	142	1.41
1942	279	158	1.77
1943	360	176	2.05
1944	353	171	2.06
1945[2]	274	166	1.65
1946[3]	193	166	1.16

[1] Basic data from Board of Governors of the Federal Reserve System. Ratios for specified years computed by the author.

[2] Revised.

[3] Preliminary.

RELATIONSHIPS BETWEEN DURABLE AND NON-DURABLE MANUFACTURES

As indicated in these reviews for some years, a sound economy requires approximate balance between durable goods manufacture and the production of non-durables. Only in this way can the products of the one be fairly exchanged for those of the other. Whether relative balance exists can be easily determined by striking a ratio between the two for any period. When the ratio is 1.00 or unity, as it was in 1939, there is balance and, hence, a basis for sustained manufacturing production; when materially above 1.00, the ratio generally portends gathering storms for manufacturing output as a whole; contrariwise, when below 1.00, the ratio usually points to clearing skies and a broad basis for recovery in manufacturing activity. Commenting on the ratio in THE AMERICAN YEAR BOOK for 1945, it was stated: "Though the table below discloses that the 1945 ratio was measurably lower than the ratio for 1944, it seems to say that further downward readjustment in production is ahead." Such, too, is the barometric reading from the 1946 ratio for 1947 output.

FOOD PRODUCTS

The index of manufactured foodstuffs production for 1946, at about 150 per cent of the average for the base period (1935-1939), showed only a fractional drop from the level of 1945 and an increase of almost 5 per cent over the level for 1943. A look at the composition of the 1946 index is particularly instructive in that it discloses, except for processed fruits and vegetables and manufactured foods other than wheat flour, dairy products, and meats, that the 1946 combined measure of manufactured foods production would have shown a more material and perhaps a more realistic drop from the 1945 level, even though the 1943 level may not have been violated. To illustrate the contradictions, the loss in wheat flour production from 1945 was about 1 per cent; in manufactured dairy products as a group, the shrinkage was 6 per cent; in meat packing as a group, about 8 per cent; while the gains in processed fruits and vegetables, and in other manufactured foodstuffs as a group, amounted to 13 per cent and 2 per cent, respectively. Butter production sloughed almost 14 per cent from the previous year's total to a level that was only 69 per cent as high as the average in the five-year period 1935-1939. Cheese output was fractionally below the level for 1945 but 64 per cent higher than in the base period; the output of canned and dried milk in 1946 recorded a loss of 16 per cent from the preceding year but remained 54 per cent above the level for the years 1935-1939.

Progressively, in 1946, shortages in foodstuffs were fast giving way to surpluses, especially noticeable in the case of goods of inferior quality inventoried during the months when distributors and consumers alike would take anything they could get in the way of processed foods, canned goods, and, to a lesser extent, frozen foods. Now, the foodsellers' honeymoon is about over. Sensing a break in prices, housewives generally are more critical of quality and less panicky in filling their larders. Only shortages of sugar, fats, and oils remain as vestiges to remind them of the tighter days of the war years when anything that was labeled food seemed more desirable than money.

All this spells further readjustment. Unsettling though it may become, as indeed it has already in respect to relatively nondescript brands of canned citrus fruit juices, this readjustment will serve to level existing distortions in price relationships before 1947 has run its full course. In this pattern, producers and distributors of frozen foods are especially likely to be badly hurt. Thanks to the sustained high incomes of the population, however, retail sales of food in 1947, measured in dollars, are not likely to fall materially below the sales of 1946, which totaled more than $21,000,000,000. Though the price level was much lower then, 1939 food store sales amounted only to a scant $10,000,000,000.

CONFECTIONERY, LIQUOR, TOBACCO

Though not as acute as in 1945, the continuing shortage of sugar operated to put an effective ceiling over the production of candy and confections, with the result that the index of output for 1946 was almost 5 per cent lower than for 1945. Meanwhile, candy output was still some 23 per cent greater than the average for the five-year period 1935-1939. On the other hand, alcoholic beverages as a group were produced in 1946 in a volume almost 10 per cent greater than in the previous year and 95 per cent heavier than in the five-year base period. Whiskey production alone scored an advance over 1945 output of 20 per cent; rectified liquors, of almost 30 per cent; other distilled spirits, of about 48 per cent. Malt liquors, on the other hand, declined almost 5 per cent from 1945. With consumption of whiskey, wines, and beer never higher, inventories of aged domestic whiskies were meanwhile further reduced; at the 1946 year-end whiskies in government-bonded warehouses totaled no more than about 300,000,000 gallons in contrast with about 415,000,000 gallons at the end of 1941. Except for imported Scotch, prospects for more whiskey are brighter now that the Government has revoked its wartime controls governing the use of corn for whiskey production; normally, about two-thirds of all domestic whiskies are distilled from corn. With all restrictions on the use of beer grains now removed, larger production of beer appears assured for 1947.

Smokers consumed almost 6 per cent more cigarettes in 1946 than in 1945, again a new high record. The total of about 350,000,000,000 was virtually twice the cigarette total for a year as recent as 1939. Not even the use of cigarettes as an auxiliary currency off-continent could account for this spectacular increase in consumption of American-made cigarettes. Not to be outdone, cigar smoking, too, gained substantially in 1946 over the previous year's total, though the increase over the 1939 consumption volume was much less spectacular. The 6,000,000,000 total for 1946 was some 11 per cent greater than that for 1945 and almost 16 per cent in excess of the 1939 consumption total.

TEXTILES, SHOES, APPAREL

The output of textiles and their products in 1946, in the aggregate, broke all earlier records. In exceeding the 1945 volume by some 11 per cent, 1946 production was 62 per cent higher than the average for the five-year period 1935-1939. Cotton, rayon, and wool textile fabrics hit new highs both in yardage and in dollar volume. Cotton textile production approximated 10,200,000,000 square yards; apparel woolens and worsteds exceeded 500,000,000 yards; rayons, in passing the 1,800,000,000-yard figure, established a new all-time high record of production. The clothing lines, too, whirred at unexampled peacetime speeds. Meanwhile, the quickening in the production of dresses, ladies' coats and suits, hosiery, underwear, millinery, accessories, and men's shirts, especially in the final quarter of the year, brought with it a noticeable softening in prices to the consumer as the year came to a close. Fur prices were also badly hit, in part, to be sure, by the relatively open early winter months in the heaviest consuming regions though more significantly because of an earlier near-collapse in the raw skin markets. Notwithstanding high production schedules, men's clothing continued in short supply almost to the end of the year, with prices firm to up.

The output of leather and leather products taken as a group was slightly more than 4 per cent greater in 1946 than in the preceding year and about 22 per cent higher than the average for the five years 1935-1939. Leather tanning alone, thanks to the meat production-price fiasco of midyear, was almost 6 per cent less than in 1945 and was but 7 per cent ahead of the annual average for the base period. Shoe output, on the other hand, scored a gain of about 11 per cent over the volume of 1945, and, in so doing, was about 33 per cent ahead of the average for the five years ended 1939.

If any general recession in business occurs in 1947, it is most likely to be sparked by declining demand for clothing items of every description;

induced by consumer uncertainties over the extent of probable price declines. This phenomenon is likely to cut deep into the profits of merchants and manufacturers alike and bring with it an increase in failures.

PETROLEUM AND REFINERY PRODUCTS

The 1946 output of domestic crude petroleum was larger than for any other year. At the same time, foreign production exceeded all earlier records. The lull in domestic demand for petroleum and its products, generally expected to come with the cessation of fighting, failed to materialize; thus, the transition from war to peace was handily the most orderly of that for any of the other basic industries. Increased use of passenger cars; enlargement of the truck and bus population, and extension of their runs; expansion in the dieselization of railroad systems; increased conversion of coal-burning heating and power equipment; enlarged uses of derivatives in the chemical, pharmaceutical, and plastic industries; all these factors and more accounted for the rapid change-over and the ease with which the industry produced for a waiting market the record total of about 1,730,000,000 barrels of crude.

Gasoline output approximated 750,000,000 barrels in 1946. This was, to be sure, a loss of about 3 per cent from the output of 1945, the all-time high. Nevertheless, in the face of the tremendous cutback in the demand for gasoline for war needs, it is little short of astounding that gasoline production in 1946 was 40 per cent higher than the average for the five years 1935-1939, when passenger car population was sizably greater than now. Fuel oil production was about 1 per cent higher in 1946 than in the previous year; lubricating oils were produced in 10 per cent greater volume; while the increase in kerosene output over the total for 1945 exceeded 30 per cent. Since refineries are likely to rely in 1947, more heavily than ever before, upon imports of crude oil to meet expected high demands for derivatives of every description, it is not likely that any material gain in domestic production of crude will occur in 1947. Especially would such be the case if reciprocal trade treaties respecting petroleum are to be further extended, as is altogether probable. (See "Petroleum.")

PAPER AND PAPER PRODUCTS

The paper industries, hard-pressed for supplies during the war years, were generally better off in 1946 than at any time. The combined index of production was 5 per cent higher than in 1945 and averaged 46 per cent greater than for the five-year period 1935-1939. But for continued tightness in respect to pulps, production of which was only fractionally larger than in 1945, the 1946 production of papers of every description would have been materially higher. Excluding pulp, paper production alone was about 6 per cent greater than in 1945 and about 40 per cent higher than the average for the base period. Gains over the production in 1945 were recorded for paperboard, printing papers, tissue and absorbent papers, and newsprint; wrapping papers, however, suffered shrinkage. For all but newsprint, the 1946 figures were higher than the average for the five-year period ended 1939; the loss from that period in newsprint production averaged 15 per cent.

CHEMICAL PRODUCTS

The index of chemical products manufacture in 1946, entirely because of losses in explosives and in soap production, declined 17 per cent from the level of 1945. Notwithstanding, the total combined output of chemical products was 136 per cent higher than the annual average for the five years 1935-1939. Paint output in 1946 was some 7 per cent greater than in the preceding year and almost 50 per cent higher than in the base period. It was in the rayon and industrial chemicals fields, however, that the most sustained forward march occurred. Rayon fiber production in 1946 was virtually 10 per cent higher than in the previous year, for a new all-time record; industrial chemicals output, at almost four times the average level for the period 1935-1939, showed an increase of about 1 per cent over the previous year's total. Soap production, short of essential fats and oils, suffered a loss from 1945 of about 8 per cent, much to the discomfort of the buying public. Even so the output was some 20 per cent heavier than during the base period.

RUBBER PRODUCTS

The output of all classes of rubber goods, as measured by the combined index, was about 4 per cent smaller in 1946 than in 1945. The index, however, was 106 per cent higher than the average for the five-year period ended 1939. Approximately 66,000,000 passenger car tires were produced in 1946, a gain of better than 30 per cent over the volume in 1940. At the same time, the 1946 output of casings for trucks and busses totaled almost 16,000,000 for a gain of more than 90 per cent over the best previous peacetime year. Of the 1,000,000 tons of rubber consumed in 1946, almost half was crude rubber as distinguished from synthetics, with the likelihood that henceforth synthetics will form a smaller proportion of annual consumption than crude.

MINE OUTPUT

The 1946 record of mining output—copper, silver, coal, iron, petroleum, lead, zinc, and gold—unlike manufacturing output, almost equaled the total for the previous year. The loss from 1945 was hardly more than 2 per cent. Contrasted with the average for the five years ended 1939, 1946 showed a production total 35 per cent greater.

ELECTRIC UTILITIES, EQUIPMENT, AND HOUSEHOLD APPLIANCES

What a sustained high level in the national income can bring to the population is strikingly reflected by the 1946 figures on the consumption of electricity. Not only were more than 1,750,000 new customers added to the ever-widening band of users during the year but also no less than 100 kilowatt hours more were consumed by the average residential user in 1946 than in the previous year, for a new all-time record, and at unit rates that were generally lower than ever before. Only consumption of electricity by industrial users failed to scale the 1945 total, this because of the disappearance of production of goods for war. At the year-end, however, even the demands from industry for electric power seemed poised for a break-through to new high levels.

The year's outstanding achievement occurred in the field of rural electrification, reflective of the improved financial position of the farm population. During 1946, some 500,000 farms, never before blessed with central station electric power, were connected for service, leaving now only about 35 per cent of all occupied farms without central electric power.

Total production of power by all utilities, exclusive of power produced by industry for its own use, was only fractionally greater than in 1945, but the total of almost 223,000,000,000 kilowatt hours would have been even greater but for the conservation that was ordered during the bleak days of the soft coal strikes and the work stoppages in industry forced by the general industrial strife that characterized the year 1946. These strikes all but killed off the expansion planned for generating capacity.

Of the anticipated addition to capacity of almost 1,500,000 kilowatts, only about 150,000 were installed during the year, not only because of strikes against manufacturers of the needed electrical equipment but also in the steel industry and other metal industries. These strikes, too, blighted manufacturing records for the entire field of domestic electrical appliances, dependent as they are on steel, copper, and lead. As 1946 ended, however, the production lines for household electric refrigerators, electric ranges, radios and television sets, washing machines, electric irons and toasters, and for countless other items, were generally more active than ever before. If there is one concern that yet remains, besides the possibility of further atrophying strikes, it lurks in the growing glut of appliances of inferior quality that already are giving the retail market a ragged appearance.

RAILROADS AND RAILROAD EQUIPMENT

Never before in peacetime did the railroads of the nation move so much traffic or so many passengers as in 1946. Yet, only by an across-the-board increase in freight rates averaging 17.6 per cent granted them by the Interstate Commerce Commission as the year was almost over, were most of the rail systems assured of relative freedom from financial embarrassment. Great were the inroads of higher operating costs—increased wages and salaries, higher maintenance charges, higher prices for the materials, equipment, and supplies they must buy to maintain their standards of service and yet compete with other modes of transportation. In 1946, the railroads spent more than $500,000,000 on capital improvements of which about 55 per cent went into new locomotives, freight cars, and passenger equipment, with the remainder going into road improvements and new structural facilities. Purchases of fuels, materials, and supplies alone amounted to $1,600,000,000 for a new all-time dollar total.

IRON AND STEEL

Strikes, within and without, cost the steel industry, and the economy as a whole, some 16,000,000 tons of lost ingot production. Better to judge the meaning of this irrevocable loss, it might be indicated that, reduced to the requisite forms, such tonnage would be sufficient to fashion 8,000,000 passenger automobiles! How the steel strike, itself, early in the year, breakages in the supply lines to it, and the two protracted strikes in the soft coal industry, retarded the processes of transition from war to peacetime pursuits is otherwise portrayed by the 1946 ratio of production of steel to industry capacity. This ratio, at 72, appears to say that were the industry going full-tilt at its war-expanded capacity of 92,000,000 tons, it could have produced 26,000,000 tons more of ingots than were turned out in 1946. It was a high toll for blunders, for stubbornness, and for the other human frailties, when all about there was but one insistent demand: Give us steel! This cost accents the need for clearer thinking against the day when steel demands may not be as pressing as they were in this first post-war year.

Notwithstanding, the year's output of steel, approximating 66,000,000 tons of ingots, was the greatest of any peacetime year and exceeded the 1929 pre-war record by about 9 per cent. Measured by the combined index of the Board of Governors of the Federal Reserve System, iron and steel production in 1946 was about 17 per cent lower than in 1945. Nonetheless, the index for the year was some 51 per cent higher than the average for the five years 1935-1939. The output of pig iron alone was about 16 per cent lower than in 1945 and 26 per cent below the 1943 level, while steel production in 1946 registered losses of 18 per cent from the previous year and 26 per cent from 1943. High-grade and special steels produced by electric furnaces sustained a much deeper loss from either 1945 or 1943 than did steels produced by the more conventional open-hearth process; the losses from 1945 alone amounted to 26 and 16 per cent, respectively. Beehive coke, an essential material in the steel-making process, suffered a production cutback from 1945 of 16 per cent while steel scrap remained in relatively tight supply.

By the 1946 year-end, the Federal Government had succeeded in disposing of the steel plants it had built for war needs; in the aggregate, these had a capacity of almost 6,000,000 tons. Costing approximately $500,000,000, they were sold at substantial discounts to the companies which had operated them during the war. With conversion of these plants to peacetime uses and with general rehabilitation of remaining plants, the ingot capacity appears adequate for all foreseeable needs. The completion of projected additions to sheet and strip plants planned for 1947 will add materially to the capacity of finishing facilities, thereby holding promise for an early break in the tight supply situation that has obtained hitherto.

It is now rather clear that the maddening race between prices, wage rates, and profits is fast drawing to some kind of a climactic close. In any event, further pressures for higher wage rates and the concern over the problematical costs to the steel industry arising out of the portal-to-portal decision in the Mount Clemens Pottery Company case, may be relied upon to spur the steel companies materially to reduce their unit costs of production. Already there are evidences that the technique of oxygen-use in steel-making has gained acceptance. Shown experimentally to speed production in both open-hearth and blast furnaces by no less than 25 per cent, this improvement in method could alone bring substantial reductions in unit prices to consumers. (See "Iron and Steel.")

NON-FERROUS METALS

Non-ferrous metals, as a group, were produced in 24 per cent smaller volume in 1946 than in 1945; yet, the 1946 index of output was 55 per cent above the average for the base period (1935-1939). Operations of smelters and refiners were about 23 per cent lower than in 1945 while fabricators showed a shrinkage in operations from the previous year amounting to 25 per cent.

Refined copper production approximated 600,000 tons compared with 843,000 tons in 1945 and the 1943 wartime peak of 1,207,000 tons. Aluminum output amounted to about 850,000,000 pounds for a loss of some 250,000,000 pounds from the wartime record. Domestic lead output and zinc production, too, declined in 1946, chiefly because of labor troubles at the mines. For lead, the 1946 production figure was only about 85 per cent of the total for the previous year and smaller than for any year since 1935. For zinc, chiefly because of strikes against smelters, the 1946 output volume was smaller by some 9 per cent than in 1945 and was lower than for any year since 1938. Silver output declined, too, in 1946; the loss from the preceding year, amounting to 25 per cent, forced the figure to a level lower than that for any year in about 75 years. Not even higher prices afforded under the recently enacted silver purchase law could counteract the adverse effects of protracted strikes at the copper and lead mines where silver ores are usually found. (See "Non-Ferrous Metals.")

AUTOMOBILES

As in the preceding year, the greatest disappointment of 1946 occurred in the automobile industry, for which production estimates had ranged as high as 6,000,000 cars and trucks. In striking contrast, the realized total was less than 3,100,000 units, of which passenger cars accounted for about 2,150,000 units and commercial vehicles for about 940,000 units. With the essential needs for personal transportation equipment far from satisfied, it was no accident that passenger car production in 1946 was some 43 per cent below the pre-war total for 1941, nor that truck assemblies recorded a loss from that year of 11 per cent.

Again, strikes and lockouts in the industry, in parts and accessory plants, in the steel industry, in the soft-coal mines, in a host of other feeder industries, had left their telltale traces, not alone on the automobile industry itself, but also and worse on the entire economy of the nation. Strikes among car and truck manufacturers alone cost 110,000,000 man-hours in lost labor, and wage-earners in automobile assembly plants the staggering total of almost $150,000,000 in lost wages. If this were all behind us now, perhaps the price for sustained industrial peace would not have been too high. As 1947 dawned, however, there were gathering indications that more labor-management clouds were in the economic skies.

The climate is still otherwise right for a production of 5,000,000 passenger cars and of 1,000,000 trucks, and more, but these must be available at prices that the buying public is not only able, but also willing to pay. Today's prices are from 35 to 50 per cent above those prevailing in 1941. Should they stay up or push even higher, a total of passenger car assemblies in excess of 3,500,000 for 1947 would be a surprising performance. Now, the buying public is much more circumspect and money-wise, less likely to reach for cars at any price, and most of all, unwilling longer to pay prices which only months before had generally prevailed only in the black market.

MACHINERY AND EQUIPMENT

The output of machinery in 1946 declined 30 per cent from the 1945 total and 45 per cent from the volume for the record year 1943. As 1946 came to a close, however, it appeared that the long decline had about been arrested. In the machine tool field—special tools, jigs, dies, moulds—production in December, 1946 against special earlier specifications was some 25 per cent higher than for the same month in the previous year. More than anything else, perhaps, this reflected intensified efforts of manufacturers of metal, plastic, and a wide variety of other products to reduce their unit costs of production.

The combined index of transportation equipment production, covering automobiles, aircraft, railroad cars, locomotives, shipbuilding, both private and government, showed a loss in 1946 from the previous year amounting to 52 per cent, chiefly because of drastic curtailments in aircraft manufacture and shipbuilding. Again reflecting the unending search for lower operating costs, if not for freedom from the threat of breaks in soft-coal supply lines, it should here be noted that better than 90 per cent of the railroad locomotives manufactured in 1946 and on order at the year-end were diesel-powered.

BUILDING CONSTRUCTION AND MATERIALS

Caught amid contradictions of critical material shortages, alternate government restrictions and their relaxation, shortages in skilled on-the-site labor, and conflicts on program emphasis, to name but a few, the construction industry gave an extraordinary accounting of itself in 1946. Expenditures on new construction alone, not counting the added billions in repairs, alterations, and maintenance, were not far below $10,500,000,000. If there is greater wonder, in the face of the most perplexing array of hazards ever concurrently at work, it lies in the fact that private construction activity as distinguished from governmental work accounted for about $8,100,000,000 or about 80 per cent of the year's total for all new construction. All the same, shortages in residential space were far from filled, and, this, even though the volume of expenditures for new non-farm dwelling space reached the total of about $3,375,000,000, a level reminiscent of some of the best years in history. To be sure, the current cost level is much higher, but this has been offset in part by the trend toward smaller dwelling units. How the construction performance of 1946 was made possible may be seen from the records covering the output of principal building materials.

Lumber, recently a critical bottleneck, was produced in 1946 in a volume almost 25 per cent higher than for the preceding year, and some 22 per cent above the annual average for the five years 1935-1939. Clay products in the aggregate, such as brick, hollow tile, floor and wall tile, showed a production total that was likewise about 25 per cent greater than in 1945; the gain, here, over the five-year average was about 48 per cent. The combined index for the manufacture of gypsum and plaster products was 16 per cent higher than for 1945 and 105 per cent above the annual average for the five years ended 1939. Cement output recorded gains over the previous year and the base period of 58 and 52 per cent, respectively. Glass production and the output of other materials, too, exceeded 1945 totals, but cast-iron soil pipe and other essential metal building products, such as copper and brass pipe, wiring, nails, radiation, bathroom fixtures, provided mediocre production performance records, because of which at the year-end many residential units were kept from completion.

CONCLUSION

Perched upon an attained new peacetime height but as yet untried by adversity, where almost any breeze could seriously disturb equilibrium, American industry now faces its greatest period of test. The human approaches to the new problems, which such previously unscaled production levels have forced, and to the old problems yet unsolved, are made no easier by the full dress rehearsals of 1946. Of warring among ourselves; of full-scale conflict in China, Indo-China, and Palestine; of an orgy of domestic real estate speculation; of rancor engendered by the newly found potentials of atomic energy; of the unspeakable suffering from cold and starvation in France and Italy and in vanquished Germany and her late partner countries; of the accelerating trend toward statism in Great Britain and the expanding footholds of Communism; of a virtual babel on the domestic political front on such transcending questions as taxes, housing, and social security; of lack of vision and understanding of the longer-range beneficences of low tariffs and freer immigration and the contribution which they could make to the cause of true world peace.

Whatever else 1947 and the years beyond may bring, there can be no sound basis for sustained domestic production by our mines and factories and easy distribution of their products so long as these inheritances from 1946 and countless others continue to press for solution with only indifferent results.

UNITED STATES TARIFF COMMISSION

By Oscar B. Ryder
Chairman, United States Tariff Commission

Commissioners

Oscar B. Ryder, Chairman	E. Dana Durand
Lynn R. Edminster, Vice Chairman	George McGill
Edgar B. Brossard	John P. Gregg

Sidney Morgan, Secretary

New York Office—Room 513, Custom House
Samuel W. Pitts, In Charge

FUNCTIONS OF THE TARIFF COMMISSION

The Tariff Commission is an independent agency of the United States Government, created by Act of Congress in September 1916 (Title VII of the Revenue Act of 1916) primarily as an investigating and fact-finding agency to assist the Congress and President in matters pertaining to foreign commercial policy.

The functions and duties of the Commission were extended in the Tariff Act of 1922 by inclusion of the flexible tariff provision, Section 315; the provision prohibiting unfair acts in the importation of goods, Section 316; and the provision for penalizing the trade of countries which discriminate against the trade of the United States, Section 317. Similar provisions were contained in the Tariff Act of 1930—the act now in force—in Sections 336, 337, and 338, respectively. The Commission has added duties provided for under the Trade Agreements Act passed in June 1934 and extended in 1937, 1940, 1943, and 1945. The function of the Commission under this act is to present information regarding imported articles that may be made the subject of concessions by the United States in trade agreements. The Commission also has duties under Section 22 of the Agricultural Adjustment Act of 1933, as amended, which permits restriction of imports that interfere with any program undertaken under that act. Cotton and wheat have been subjects of investigation under this section.

The Philippine Trade Act of 1946 provides that quotas may be imposed on certain articles imported from the Philippines by the President if investigation by the Tariff Commission indicates that such action is necessary. This section becomes effective Jan. 1, 1948, but investigations by the Commission prior to that date are authorized.

HISTORY OF THE COMMISSION

In the first few years of its existence, the Commission published reports on reciprocity and commercial treaties, on colonial tariff problems, and on customs administrative laws, also a series of reports on commodities for which the First World War had raised special problems of tariff policy. In 1921, to assist in the Congressional tariff revision then under way, it issued the first edition of the *Summaries of Tariff Information* (now called *Summaries of Commodity Information*), containing data on production, imports, exports, and competitive conditions respecting all commodities involved in the import trade of the United States.

From 1921 through 1933, the Commission, in addition to its extensive activities under the flexible provisions, published a number of extensive surveys and reports on specific commodities, and expanded and brought to date the *Summaries of Tariff Information,* a constant source of reference during consideration by the Congress of the bill which became the Tariff Act of 1930.

From 1934, when the Trade Agreements Act was passed, until the beginning of the Second World War in 1939, work in connection with trade agreements constituted the largest segment of Commission activities. Other work, mainly under general powers of the Commission, continued on a substantial scale. Of special importance were the extensive reports prepared during this period on the trade and trade policies of countries such as Japan, the Philippines, Germany, and Italy. Almost as important were the reports prepared on commodities such as wood pulp, nitrates, and iron and steel, which presented special import problems.

WAR ACTIVITIES

Beginning in the fall of 1939, the Commission directed its activities largely to immediate war problems and to giving all possible assistance to defense agencies and to their successor war agencies. Almost immediately after the beginning of the war in Europe, the Commission made a study of the current and probable future effects of the war on United States imports and on the ability of this country to provide commodities necessary for defense and civilian consumption. When the Office of Emergency Management was established, it not only drew personnel from the staff of the Tariff Commission but in part of its work relied largely on commodity information compiled by the Commission's staff. As war agencies succeeded defense agencies, the cooperative activities of the Tariff Commission were increased to give every possible assistance in the prosecution of the war.

Beginning in the fall of 1943, the Commission turned increasing attention to post-war problems. At first on its own initiative and later at the request of the Finance Committee of the Senate and the Ways and Means Committee of the House, the Commission undertook the preparation of a series of special reports on the post-war foreign-trade position of the United States, as to its total trade and as to its trade in specific commodities and with specific countries.

CURRENT WORK OF THE COMMISSION

At the present time the two phases of the Commission's work that stand out in importance are the preparation of reports in response to requests from Committees of Congress and activities in connection with the trade agreement negotiations which are planned to begin in the spring of 1947. Another important phase of the current work of the Commission results from its participation in the activities of various interdepartmental committees set up to study and report on the many problems of international trade policy now facing the United States.

WORK IN DIRECT RESPONSE TO CONGRESSIONAL REQUEST

Much of the Commission's activity is carried on at the direct request of Congressional Committees. There is pending before the Commission a series of requests from the Senate Finance and House Ways and Means Committees. In response to these requests, the Commission is preparing a series of reports on United States industries which have been substantially affected by the war in such manner as to alter their competitive positions in relation to the industries of foreign countries. Notwithstanding the great pressure of other work and a severe reduction in staff, the Commission in the past year completed eight reports in this series, bringing the number of the reports in the series up to 18.

Currently the following reports in the "War Changes in Industry Series" are in active progress:

China clay
Dyes
Mica
Watches
Countable cotton cloth
Woolens and worsteds
Softwood lumbers
Starches
Oils and fats for foods and soaps
Flaxseed, linseed, and other drying oils and materials therefor
Potash
Grapes and wines
Copper (through refining)
Plastics products
Zinc
Lead
Pulpwood, wood pulp, and newsprint
Cattle and beef
Rayon, nylon, other synthetic fiber, and raw silk

Preparation of reports are pending on the changes since 1929 in the international trade policies of foreign countries, particularly as they have affected, or may affect, the trade of the United States. The Commission is issuing a series of reports on Latin American countries covering agricultural, mining, and manufacturing industries; economic controls and commercial policies; and recent developments in foreign trade. Forty reports in this series have already been issued, and 10 additional reports, which will complete the series, are in process and will be completed in the next few months. The Commission has also completed a series of studies on the pre-war commercial policies and trade of certain European countries and a similar work is in progress with respect to British Empire countries.

SENATE AND HOUSE COMMITTEES ON AGRICULTURE

Recently the Congress has had under consideration legislation to implement a policy with respect to the domestic wool industry. In the preparation of this legislation, the Special Senate Committee to Investigate Production, Transportation, and Marketing of Wool had the cooperation of representatives of the Tariff Commission during its extended hearings on wool. The Commission also furnished assistance to the Senate Committee on Agriculture and Forestry when it was considering the report of its Subcommittee, and to the House Committee on Agriculture when wool legislation was before it. Currently the Commission has in progress a study with respect to wool costs being made at the request of the Special Senate Committee to Investigate Production, Transportation, and Marketing of Wool.

WORKING OUT A POST-WAR COTTON PROGRAM

Much assistance has been given by members of the staff to the House Committee studying cotton problems. This assistance has extended over a period of more than six months. Currently most of the work is completed, but there is still some work to be done in connection with the report to be issued by the Committee.

CONSIDERATION OF THE PHILIPPINE TRADE ACT OF 1946

One of the important pieces of legislation enacted by the Congress during the past year was the Philippine Trade Act of 1946. This legislation, designed to aid the Philippines in the reconstruction of their economy which was practically destroyed by the war, was the subject of extended consideration by the Ways and Means Committee of the House and the Finance Committee of the Senate. Members of the staff were assigned to assist these Committees and a great deal of information was supplied in connection with the problems under discussion. The duties assigned to the Tariff Commission under this act are of a continuing nature.

A continuing part of the Commission's activities is the preparation of reports on pending legislation affecting tariffs and international trade.

WORK IN PREPARATION FOR TRADE AGREEMENT NEGOTIATIONS

The major part of the time of the staff in recent months has been devoted to the preparation of material in connection with the proposed trade agreements. The Administration has announced its intention of making a series of agreements with some 16 foreign countries, and the plan is for these negotiations to begin in the spring of 1947. Members of the Commission and of the staff take an active part in the work of the committees which make up the lists of articles on which duty concessions will be considered by the United States in the course of these negotiations. Practically all the data on the basis of which articles are selected or rejected for inclusion in these lists are supplied by the Tariff Commission. On each article included in these lists the Commission is preparing detailed digests which set forth not only the statistical data with respect to imports, exports, and production of each article, but summarize all the available facts regarding the competition between the domestic and the imported product and discuss the probable effect of a reduction in duty.

WORK ON INTERDEPARTMENTAL COMMITTEES

A substantial part of the work of the Tariff Commission finds expression in its contribution to the work of Interdepartmental committees. The scope of its activities in this committee work is very wide and has tended to expand in the past year. The work on these committees ranges from the Commission's important representation on the Executive Committee on Economic Foreign Policy to its representation through members of its staff on some of the subcommittees concerned with problems affecting our foreign economic policy.

WORK WITH THE UNITED NATIONS

The Tariff Commission is cooperating actively in the work of the Economic and Social Council of the United Nations. In connection with this work a senior member of the Commission's staff has been appointed as a member of the American group advisory to John G. Winant who represents the United States on the Council.

REVIEW OF CUSTOMS ADMINISTRATIVE LAWS

The Commission has in preparation a report on the operation of the customs administrative laws. This is a task assigned to the Commission as part of its organic act and a phase of the work for which there is urgent need both by the Congress and by manufacturers and importers.

SYNTHETIC ORGANIC CHEMICALS

The Commission has in progress a compilation of the data for the annual census of synthetic organic chemicals for 1945. Through the work which the Commission does on the production and sales of these products, the industry is kept advised in regard to developments in the trade as a whole, and the detail incorporated in the reports makes them especially valuable to those in the Government concerned with the administration of laws relating to these products.

The Commission also issues

monthly a statement covering the production of a limited list of synthetic organic chemicals which carries forward the work undertaken by the War Production Board which proved so valuable that the Bureau of the Budget has approved its continuance on a smaller scale.

NEW YORK OFFICE

The Tariff Commission supplements the information on imports contained in published statistics of the Department of Commerce through more detailed data obtained by a small force which it maintains in New York. This office analyzes the entry papers and obtains data needed by the Commission or by other government agencies. The data so obtained find their way into the summaries of commodity information, and some that are of particular value to the trade are issued for public distribution.

WORK UNDER SPECIAL PROVISIONS OF LAW

In addition to the work previously referred to on trade agreements under Section 350 of the Tariff Act of 1930, as amended, the Commission has in progress an investigation with respect to harsh or rough cotton having a staple of less than ¾ inch in length under Section 22 of the Agricultural Adjustment Act, as amended. There are no investigations pending under other special provisions of law.

ADMINISTRATION OF THE TARIFF LAWS

By C. A. Freeman
Division of Fiscal Administration, Bureau of Customs,
Treasury Department

GENERAL

Back to normal after the end of the war, the hope and expectation of American producers and consumers alike, were no more realized in our foreign trade during the fiscal year ended June 30, 1946 than they were in our domestic economy. Trade, both with Europe and the Orient, had to wait first for the return of the boys in uniform from the far flung theaters of military operations, and even when bottoms were available for mercantile purposes, the production of goods for export to this country was slow to develop in those areas long occupied by Nazi and Nipponese forces. Consequently, months elapsed before the first driblets of goods, long absent from and eagerly awaited in the American market, began to arrive from China and central Europe. No imports of any consequence except pearls were received from Japan, while the only importation of any magnitude from Germany consisted of hops valued at a little over $2,000,000 brought to this country in May.

CUSTOMS COLLECTIONS

Following the mild upward trend which prevailed in most of 1945, customs collections continued to increase at a more rapid tempo during 1946. The total of $440,725.085 exceeded by 23 per cent that of 1945 ($358,138,757) and was greater than for every year but one (1937) since the passage of the present Tariff Act on June 17, 1930. This rise was not continuous, however, recessions occurring in December, February, and June with successively higher peaks in October, January, and April.

Increased collections were received from all types of entries except informal entries (those valued at less than $100), the sharpest rise being in the case of baggage entries and mail entries which reflected respectively the growing volume of tourist travel and the greater importance of commercial importations by mail. Duties on consumption entries during 1946 increased to a considerably greater extent than those on warehouse withdrawals, owing partly to immediate

VALUE OF DUTIABLE IMPORTS FOR CONSUMPTION AND ESTIMATED DUTIES COLLECTED, BY COUNTRIES

(Fiscal Years 1945 and 1946)

	Duty		Value		Percentage Increase or Decrease (−)	
	1945	1946	1945	1946	Duty	Value
Europe:						
Belgium and Luxembourg	$ 36,763	$ 5,221,536	$ 343,223	$ 47,161,534	14,103.2	13,640.8
Czechoslovakia	2,563	1,766,111	5,548	6,494,302	68,808.0	117,156.6
France	141,879	4,452,529	501,649	16,177,283	3,038.3	3,124.8
Greece	792,581	843,981	1,342,394	2,164,688	6.5	61.3
Italy	49,032	1,701,114	278,350	6,777,258	3,369.4	2,334.8
Netherlands	5,330	976,739	17,271	10,181,385	18,225.3	58,850.8
Norway	—	1,081,637	—	4,422,752	—	—
Portugal	7,264,855	4,405,003	16,557,465	14,571,534	−39.4	−12.0
Spain	11,968,010	10,322,027	45,715,761	45,598,203	−13.8	−.3
Sweden	180,074	1,692,867	813,193	8,065,639	840.1	891.8
Switzerland	18,081,827	37,992,394	50,781,347	102,944,747	110.1	102.7
U. S. S. R.	1,334,467	1,278,901	4,933,162	6,161,031	−4.2	24.9
United Kingdom	19,222,278	27,410,401	48,904,548	80,714,790	42.6	65.0
Other Europe	446,800	1,612,339	1,014,751	6,026,660	260.9	493.9
Total Europe	59,526,459	100,757,579	171,208,662	357,461,806	69.3	108.8
North and Central America:						
Canada	50,381,258	43,314,126	344,023,676	279,008,406	−14.0	−18.9
Cuba	42,812,571	24,775,910	100,919,612	95,008,312	−42.1	−5.9
Dominican Republic	278,689	1,468,691	1,662,896	5,279,161	427.0	217.5
French West Indies	1,201,571	119,317	665,758	251,938	−90.1	−62.2
Jamaica	629,049	500,811	1,517,729	1,072,001	−20.4	−29.4
Mexico	18,487,353	21,087,998	89,573,569	115,642,020	14.1	29.1
Netherlands West Indies	1,278,246	1,717,585	4,668,628	12,589,088	34.4	169.7
Newfoundland	220,126	562,360	2,363,721	4,480,712	155.5	89.6
Other countries	1,347,825	1,721,876	7,101,814	8,439,247	27.8	18.8
Total North and Central America	116,636,688	95,268,674	552,497,403	521,770,885	−18.3	−5.6
South America:						
Argentina	31,386,710	40,031,611	77,378,748	101,359,400	27.5	31.0
Bolivia	58,355	542,786	162,070	1,019,500	830.1	529.0
Brazil	5,024,547	7,893,628	42,677,719	53,001,971	57.1	24.2
Chile	5,228,526	4,909,899	9,853,075	12,335,660	6.1	25.2
Colombia	866,548	1,001,748	9,303,927	10,776,923	15.6	15.8
Ecuador	608,169	642,094	5,811,411	5,816,561	5.6	.1
Peru	2,208,251	2,274,101	6,304,985	8,732,523	3.0	38.5
Surinam	549,543	689,970	3,799,656	4,857,018	25.6	27.8
Uruguay	28,645,940	23,513,694	45,111,787	39,705,979	−17.9	−12.0
Venezuela	5,269,850	8,240,274	54,785,283	80,062,309	56.4	46.1
Other countries	237,487	316,568	2,756,921	3,374,038	33.3	22.4
Total South America	80,083,926	90,056,373	257,945,582	321,041,882	12.5	24.5
Oceania:						
Australia	41,391,715	68,988,968	67,854,988	109,834,166	66.7	61.9
New Zealand	7,459,369	9,835,104	12,640,358	15,708,183	31.8	24.3
Other countries	87,416	54,820	502,688	423,513	−37.3	−15.8
Total Oceania	$ 48,938,500	$ 78,878,892	$ 80,998,034	$ 125,965,862	61.2	55.5

	Duty		Value		Percentage Increase or Decrease (−)	
	1945	1946	1945	1946	Duty	Value
Asia:						
China	$ 170,856	$ 3,187,232	$ 425,918	$ 14,358,352	1,765.4	3,271.2
India	5,094,469	8,680,764	29,325,363	73,354,943	70.4	150.1
Iran	2,569,590	5,572,830	6,077,598	12,639,408	116.9	108.0
Iraq	661,522	854,789	3,226,362	5,500,099	29.2	70.5
Netherlands Indies	2,315,751	1,749,579	2,870,448	2,612,307	−24.4	−9.0
Palestine	1,520,966	2,314,085	14,990,087	22,763,038	52.1	51.9
Syria	1,110,331	952,027	924,088	1,457,918	−14.3	57.8
Turkey	13,229,086	14,673,432	42,099,361	50,490,083	10.9	19.9
Other countries	220,639	397,061	1,297,284	3,388,333	80.0	161.2
Total Asia	26,893,210	38,381,799	101,236,509	186,564,481	42.7	84.3
Africa:						
Egypt	319,470	1,293,859	2,799,306	14,424,108	305.0	415.3
Gold Coast	1,080,149	1,087,901	1,967,489	2,141,474	.7	8.8
Maderia Islands	3,539,316	4,480,778	5,715,104	7,676,488	26.6	34.3
Madagascar	267,394	223,802	5,903,611	4,200,852	−16.3	−28.8
Union of South Africa	4,985,963	18,064,410	14,917,121	47,162,602	262.3	216.2
Rhodesia	227,774	271,455	511,347	556,015	19.2	8.7
Other countries	587,803	641,068	3,184,325	3,224,513	9.1	1.3
Total Africa	11,007,869	26,063,273	34,998,303	79,386,052	136.8	126.8
Grand Total	$343,086,652	$429,406,590	$1,198,884,493	$1,592,190,968	25.2	32.8

demand for goods long absent from American markets, partly to the admission duty free and without warehousing of most of the sugar imported into this country, and partly to reduced importations of tobacco and alcoholic liquors which together with sugar and wool are the important commodities most frequently warehoused.

COMMODITY REVENUE TREND

Strangely enough, the augmented customs revenue in 1946 took place in the face of diminished returns from the four commodity groups which have long been important sources of customs revenue, sugar, alcoholic beverages, tobacco, and agricultural products. Sugar, the leading source of customs revenue during most of the years in the past two decades, yielded only $9,216,007 during 1946, not because less sugar was imported but because of the policy of admitting it duty free for government distribution to consumers. With the lessening of restrictions on the use of domestic grains for production of alcoholic beverages, the demand for foreign alcoholic liquors abated and duties on such imports correspondingly declined. The comparatively small need in this country for imported oats and barley in 1946 accounted to a very large extent for the decline in the duties collected on agricultural products.

Duties collected under every other schedule of the Tariff Act, on the other hand, increased. Duties on raw wool reached the somewhat amazing total of $150,045,369, the largest revenue collected on this commodity for any year of this country's history, which was not only $42,506,327 more than was received from imports of raw wool in 1945, but also accounted for more than one-third of the entire customs revenue in 1946. Imports of materials which, during the war, had been absent from the American market or had been admitted in very limited quantities, caused collections under the remaining schedules of the Tariff Act to increase rather sharply. Duties on burlaps, which were practically off the market during the war, were 17 times as large as during 1945.

VALUES OF DUTIABLE AND TAXABLE IMPORTS FOR CONSUMPTION AND ESTIMATED DUTIES AND TAXES COLLECTED BY TARIFF SCHEDULES

(Fiscal Years 1945 and 1946)

Tariff Schedule	Value		Estimated Duties and Import Taxes[1]		Percentage Increase or Decrease (−)	
	1945	1946	1945	1946	Value	Duties
1. Chemicals, oils, and paints	$ 68,176,585	$ 70,598,327	$ 9,047,324	$ 10,959,060	3.6	21.1
2. Earths, earthenware, and glassware	12,346,021	20,325,163	3,360,887	5,802,236	64.6	72.6
3. Metals and manufactures	120,015,992	174,136,915	28,367,624	46,442,956	45.1	63.7
4. Wood and manufactures	40,930,219	50,873,862	2,472,772	3,520,114	24.3	42.4
5. Sugar, molasses, and manufactures	34,264,225	33,489,140	10,319,515	9,216,007	−2.3	−10.7
6. Tobacco and manufactures	82,540,931	83,990,446	29,533,752	23,882,031	1.8	−19.1
7. Agricultural products and provisions	326,845,600	317,361,983	46,748,845	39,786,482	−2.9	−14.9
8. Spirits, wines, and other beverages	77,513,631	75,612,468	55,316,286	43,637,160	−2.5	−21.1
9. Cotton manufactures	12,722,722	26,683,741	2,430,697	4,936,715	109.7	103.1
10. Flax, hemp, jute, and manufactures	14,317,694	59,517,373	3,388,064	9,100,448	315.7	168.6
11. Wool and manufactures	182,973,406	268,152,590	116,923,295	165,206,165	46.6	41.3
12. Silk manufactures	759,309	3,490,855	361,616	1,690,673	359.7	367.5
13. Manufactures of rayon or other synthetic textiles	457,501	7,895,002	264,562	3,018,864	325.7	1041.1
14. Pulp, paper, and books	8,265,750	11,027,260	1,171,342	1,448,225	33.4	23.6
15. Sundries	127,928,909	252,598,190	24,741,609	45,763,735	97.5	85.0
Free list commodities taxable under the Revenue Act of 1932 and subsequent acts	87,793,057	135,321,527	8,086,972	14,534,043	54.1	79.7
Dutiable under Section 466, Tariff Act of 1930, etc.	1,032,940	1,116,126	551,687	461,824	8.1	−16.3
Total	1,198,884,492	1,592,190,968	343,086,849	429,406,738	32.8	25.2

---

[1] Taxes collected on dutiable commodities under the revenue acts and the Sugar Act of 1937 are included in appropriate schedules.

Precious stones yielded three times the revenue collected during the previous year. Manufactures of rayon and other synthetic textiles provided 11 times as much revenue, manufactures of silk four and one-half times as much, carpets twice as much, zinc six times as much, while watches and watch movements showed an 80 per cent increase, yielding $26,173,247 in revenue in 1946.

REVENUE TREND BY COUNTRIES

Although European imports were slow to arrive during the early part of the year, once space was available for bringing them to this country such goods began arriving in ever increasing quantities. As a result, total collections on European goods amounted in 1946 to $100,757,579 which resulted in more revenue from duties on European goods than from those from any other geographical area, the first time since 1940 that Europe occupied the dominant position as a source of customs revenue. Although some of the individual countries of Europe, long off the American market, yielded increased duties in fantastic ratios, Great Britain and Switzerland continued as the chief sources of revenue with the latter country accounting for far greater customs collections than the former, owing to the greatly increased volume of watches and watch movements received in 1946, for which Switzerland is almost the only source of supply. Spain and Portugal, which had been important sources of customs revenue during blackout of most of the rest of Europe, showed diminished revenues, and they were joined in this respect by Soviet Russia.

Wool was the determining factor in causing Australia to lead every other country in 1946 as a source of customs revenue, while the other important wool producing areas, Argentina, Uruguay, and the Union of South Africa, were also important sources of customs revenue, Argentina being third in importance among the countries of the world. Back in second place, after being for a single year the leading source of customs revenue, Canada despite its variety of materials desired in this country yielded less customs revenue than in 1945, and Cuba, with most of its sugar admitted free of duty, declined in importance to an even greater extent. With the shipping lines again open sharp increases in duty yield were recorded on goods from all the Asiatic countries, except Syria and the Netherlands East Indies, India the chief source of burlaps leading the way.

DUTY REFUNDS

Some duties are collected in excess of the amounts subsequently found to be actually due. The refunds of such excessive duties amounted to $4,089,176 in 1946 and $7,477,462 the previous year. Another type of refund, designated as drawback, is provided after the exportation under proper safeguards of merchandise previously imported. Such drawback aggregated $6.638,500 in 1946 and $6,895,847 in 1945. More than 99 per cent of the drawback allowed was on merchandise manufactured from imported materials; among the most important of these during 1946 were wool, sugar, coal-tar products, brass and bronze manufactures, and copper.

ENTRIES OF MERCHANDISE

The upward trend in the number of entries of merchandise continued for the third successive year. All the important types of entries, except in-

MERCHANDISE ENTRIES

	Number of Entries		Duties Collected		Percent of Increase or Decrease (−)	
	1945	1946	1945	1946	No. of Entries	Duties
Consumption entries....	390,497	426,434	$187,568,193	$254,024,733	9.2	35.4
Warehouse and rewarehouse entries........	27,413	35,586	—	—	29.8	—
Warehouse withdrawals	97,534	110,964	156,184,675	170,861,955	13.8	9.4
Mail entries...........	288,664	383,127	617,010	1,030,535	32.7	67.0
Baggage entries........	916,653[1]	1,260,195	589,951	1,086,235	37.5	84.1
Informal entries........	580,631	515.373	1,551,399	1,469,201	−11.2	−5.3
Appraisement entries...	7,741	14,312	140,826	188,824	84.9	34.1
Increased and additional duties..............	—	—	7,684,713	7,957,983	—	3.6
Other.................	437,722	440,560	404,549	553,300	0.6	36.8
Total...........	2,746,855[1]	3,186,551	354,741,316	437,172,766	16.0	23.2

[1] Revised.

formal entries, were more numerous than in 1945. The greater freedom of tourist travel accounted for the larger number of baggage entries while increased commercial activities were reflected in the greater number of consumption and warehouse entries.

INTERNATIONAL TRAFFIC

Border traffic for the fifth consecutive year increased in volume. More than 12,000,000 automobiles and buses entered the United States during 1946, carrying 41,636,686 passengers. With the increase in automobile traffic. however, the number of passenger trains and passengers on such trains declined. Vessel arrivals were more numerous, and the number of passengers arriving by vessel was greater than in 1945 and travel by air continued for the fifteenth consecutive year to increase rapidly. Aircraft to the number of 60,740 arrived in the United States from abroad during 1946, bringing 958,146 passengers.

LAW ENFORCEMENT

For the fifth successive year seizures for the violation of customs laws were more numerous than during the preceding year, the increase in 1946 being due to a larger number of seizures of narcotics, liquors, and prohibited articles, which offset a slight decline in the number of seizures of other merchandise. The increased tourist travel accounted for the greatly increased value of seizures of jewelry, wearing apparel, and furs, the articles which tourists most frequently attempt to smuggle. Despite the numerical increase of seizures in liquors, the quantity and value of alcoholic beverages were considerably less in 1945.

RAILROADS

By R. V. Fletcher

President, Association of American Railroads

GENERAL

Two major problems occupied the attention of the railroad industry in 1946. The first was readjustment in operations to meet the requirements of peacetime traffic. The second concerned the sharply rising level of operating costs, the result of substantial wage increases to employees, and higher unit prices paid for fuel, materials, and supplies.

The labor unrest that prevailed throughout the country for a considerable part of 1946 affected railroad operations. The strike of railroad engineers and trainmen in May, though brief, created a national emergency and occupied the full attention of the nation's leaders until the dispute was settled. Two strikes in the bituminous coal fields, in April–May and November–December, led to restricted passenger train operations and embargoes on freight shipments. Strikes in the automobile, steel, electrical supply, meat packing, maritime, and other industries upset the even flow of traffic and slowed the delivery of new equipment and other facilities needed by the railroads.

Notwithstanding interruptions caused by work stoppages, industry generally made rapid progress in the shift from war to peace production. Business activity, employment, and national income for the year as a whole were at record peacetime levels. Agricultural production reached a new all-time high. As a result, railroad freight traffic, while falling below the exceptionally high volume of the war years, was substantially greater than in any pre-war year.

FREIGHT AND PASSENGER TRAFFIC PROBLEMS

The characteristics of railroad freight traffic in 1946 created a number of operating problems. The heavy export program of foodstuffs and fuel to war-torn countries abroad, combined with reconversion and inventory needs of industry in this country, resulted in an unusual traffic pattern. Rearrangement of railroad operations to meet the situation was hindered by frequent strikes and by widespread adoption of the five-day work week in industrial plants. These developments adversely affected freight car utilization, because normal loading and unloading points were shut down for weeks at a time during strike periods, and because many cars lay idle on Saturdays and Sundays throughout the year awaiting loading or unloading. Troublesome freight car shortages developed, but 90 per cent of the demands of shippers for cars were met currently and promptly.

Railroad passenger traffic in 1946, while greater than in any pre-war year, declined substantially from the wartime level. Unlike the trend in freight traffic, which decreased substantially in the first half but recovered to some extent in the second half, passenger traffic continued a downward course throughout the year, and at an accelerating rate. Reduced military movements, the return of private automobiles to the highways in substantial numbers, and the considerable increase in air travel all contributed to the declining trend in railroad passenger business in 1946.

OPERATING COSTS

Railroad unit operating costs increased substantially in 1946. Wage rates of employees were increased about 20 per cent during the year, which when combined with the increases granted in 1941 and 1943 brought the level of railroad wage rates 51 per cent above 1939. Unit prices of fuel, materials, and supplies increased 13½ per cent, which brought the index of such prices 54 per cent above 1939. As a result of these increases in wages and prices, railroad operating costs in 1946 were more than $2,000,000,000 greater than they would have been had 1939 unit costs prevailed.

THE 1946 WAGE CASE

When war broke out in Europe in 1939, railroad employees in the United States were averaging 74 cents per straight time hour worked. Following the wage increases of 1941, the hourly wage rose to 83.5 cents, and was further advanced to 93 cents after the awards of 1943. In addition, vacation periods with pay were granted.

Shortly after the end of the war, the 20 standard unions representing railroad labor filed demands for further substantial increases in wage rates. Some of the demands also proposed certain changes in working rules. In January 1946, 18 of the unions agreed with railroad management to arbitrate the dispute. The Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Engineers refused to join the arbitration proceedings.

Two arbitration boards were appointed, one to hear the dispute involving non-operating forces (shopmen, maintenance of way workers, clerks, etc.), and the other for operating employees (firemen, conductors, and switchmen). Increases of 16 cents per hour, retroactive to Jan. 1, 1946, were awarded by these two boards, the reports being handed down April 3.

Meanwhile, on March 8, 1946, following a strike threat by the two unions not participating in the arbitration proceedings, President Truman appointed an Emergency Board to make recommendations for settlement. After hearing the case, the Board made its report April 18, also recommending an increase of 16 cents per hour for employees represented by the two unions, retroactive to Jan. 1, 1946. The 18 unions participating in the arbitration proceedings signed agreements accepting the awards but at the same time announced dissatisfaction with the amount of the increase. New demands for further increases were prepared and served on the railroads shortly thereafter.

The two unions representing trainmen and engineers rejected the recommendations of the Emergency Board and called a strike to begin May 18. On May 17, President Truman, by executive order, directed the Office of Defense Transportation to take over and operate the railroads for the United States Government. Shortly before the strike was scheduled to begin, a five-day truce was announced. Negotiations during the truce period failed to produce a settlement, so, at 4 p.m. May 23, trainmen and enginemen walked off their jobs, and railroad operations were greatly curtailed.

Two days later, May 25, President Truman announced that the strike had been called off and that the striking unions had agreed to accept an additional increase of 2½ cents per hour, effective May 22. The 18 unions not involved in the strike also accepted this additional increase of 2½ cents per hour, and withdrew their demands for further increases.

The two increases combined amounted to 18½ cents per hour, making a total increase in railroad payrolls, including payroll taxes, of $735,000,000 annually on the basis of 1946 employment. By reason of these increases, the aggregate railroad payroll in 1946 approximated $4,200,000,000, an average of $3,090 per employee, both figures being the highest on record.

Table I shows the trend in railroad employment and wages for the period 1939 to 1946. These statistics, as well as all other railroad data cited herein, apply to Class I railways which, as a group, earn about 97 per cent of the total operating revenues of all steam railways in the United States.

THE 1946 RATE CASE

Following the wage increases of 1941, railroads were authorized by the Interstate Commerce Commission to increase freight rates by about 4½ per cent and passenger fares by 10 per cent for the duration of the war and six months thereafter. These increases became effective in the early part of 1942. The freight rate increases were suspended May 15, 1943, after little more than one year's application. The passenger fare increase has remained in effect since first applied.

On April 15, 1946, shortly after the two Arbitration Boards had awarded the wage increases of 16 cents per hour, railroads petitioned the Interstate Commerce Commission to authorize freight rate increases averaging between 19 and 20 per cent, and to cancel the time limitation on the 1942 passenger fare increase. In view of the fact that the wage awards were retroactive to Jan. 1, and the further fact that prices of fuel, materials, and supplies had been rising steadily since the end of the war, the carriers asked permission to put the proposed increases into effect May 15, upon one day's notice, in advance of final hearings on and disposition of the petition.

After preliminary hearings in the early part of May, the Commission, June 20, 1946, authorized interim increases in freight rates averaging about 6 per cent, effective July 1, 1946. After further and more extended hearings, the Commission Dec.

TABLE I

RAILROAD EMPLOYMENT AND WAGES

Year	Average Number of Employees	Total Payroll (millions)	Average Compensation per Employee	
			Per Year	Per Straight Time Hour (cents)
1946*	1,360,000	$4,200	$3,090	112.0¢
1945	1,419,505	3,862	2,721	93.3
1944	1,414,776	3,858	2,727	93.0
1943	1,355,114	3,521	2,598	89.3
1942	1,270,687	2,932	2,307	83.5
1941	1,139,925	2,332	2,045	76.9
1940	1,026,848	1,964	1,913	74.2
1939	987,675	1,863	1,887	74.0

* Partially estimated.

5 canceled the interim increases and substituted increases averaging about 17.6 per cent, effective Jan. 1, 1947. At the same time, the 1942 passenger fare increases were continued in effect without expiration date.

The new freight rate increases will produce about $970,000,000 in additional freight revenue in 1947, based on the 1946 level of traffic. As the interim increases in effect in the last half of 1946 produced about $170,000,000, the net increase in freight revenues in 1947 over 1946 will approximate $800,000,000, assuming the same volume of traffic for the two years. The 1942 passenger fare increase, now on a permanent basis, may produce about $90,000,000 of additional passenger revenue, as compared with pre-war fares. These additional freight and passenger revenues will offset only about one-half of the increase in payrolls and purchases due to higher wage rates and unit prices since 1939.

On Oct. 28, the Interstate Commerce Commission authorized the Railway Express Agency to increase express rates by about 20 per cent. These increases went into effect Dec. 13, 1946.

The 1945 Land Grant Act, signed by President Truman on Dec. 12, 1945, became effective Oct. 1, 1946. This act repealed the reduced rates on government traffic provided for in the several acts granting lands in aid of railroad construction, some of which had been in effect since 1850. Through these reduced rates, the Government had been compensated many times over for the value of the lands granted.

Table II shows the average revenue received by Class I railroads per ton-mile of freight and per passenger-mile The trend in these averages from 1939 to 1946 indicates the extent to which railroad rates and fares lagged behind increases in wages and prices of fuel, materials, and supplies.

The freight rate increases, effective Jan. 1, 1947, will raise average revenue per ton-mile to about 1.1 cents in 1947, or about 13 per cent above 1939. The reduced volume of military furlough travel, which was handled on a round-trip basis at 1¼ cents per mile, will tend to raise average revenue per passenger-mile in 1947 to about 2 cents, or about 9 per cent above 1939. These increases in rates and fares are in sharp contrast to the increases of more than 50 per cent in wage rates and in prices of railroad fuel, materials, and supplies that have taken place over the same period of years.

TABLE II

RAILROAD REVENUE PER TON-MILE AND PER PASSENGER-MILE

Year	Average Revenue per Ton-Mile (cents)	Average Revenue per Passenger-Mile (cents)
1946*	0.975	1.950
1945	.959	1.871
1944	.949	1.874
1943	.933	1.882
1942	.932	1.916
1941	.935	1.753
1940	.945	1.754
1939	.973	1.839

* Partially estimated.

RAILROAD TRAFFIC

In 1944, at the peak of the war effort, railroads performed 737,000,000,000 freight ton-miles and 95,500,000,000 passenger-miles of service. This traffic represented increases over pre-war peaks of 65 per cent in freight service and 104 per cent in passenger service. These high percentages of increase take on added significance in view of the fact that the pre-war high in freight service occurred in 1929 and in passenger service as far back as 1920. Following those years, substantial declines took place in both freight and passenger traffic. Measuring the increases from 1939, the year in which the war began in Europe, freight traffic in 1944 showed an increase of 121 per cent and passenger traffic an increase of 322 per cent.

Freight traffic declined in 1945 to 681,000,000,000 ton-miles and passenger traffic to 91,700,000,000 passenger-miles, respective decreases of 8 and 4 per cent below 1944. Traffic declined further in 1946 to about 590,000,000,000 ton-miles and 65,000,000,-

000 passenger-miles, decreases below 1945 of 13 per cent and 29 per cent respectively. Practically all of the decrease in ton-miles occurred during the first half of 1946, as the volume in the second half was very nearly the same as in the corresponding period of 1945. This was not the case in passenger traffic, however, as the relative decrease of 19 per cent in the first half of the year was doubled (38 per cent) in the second half. Thus, the railroads entered 1947 with freight traffic leveled off about midway between the war and pre-war peaks. Passenger traffic, on the other hand, was still on a downward trend, with no indication that a leveling off point was being approached.

Table III shows ton-miles and passenger-miles of service performed by Class I railways in each year 1939 to 1946 and for the pre-war peak years of 1929 and 1920.

TABLE III

RAILROAD TRAFFIC

Year	Revenue Ton-Miles of Freight	Passenger-Miles
1946*	590,000,000,000	65,000,000,000
1945	681,000,757,000	91,717,226,000
1944	737,246,444,000	95,549,090,000
1943	727,075,495,000	87,819,503,000
1942	637,983,503,000	53,658,615,000
1941	475,072,001,000	29,350,229,000
1940	373,253,197,000	23,762,359,000
1939	333,438,412,000	22,651,334,000
1929	447,321,561,000	31,074,135,000
1920	410,306,210,000	46,848,668,000

* Partly estimated.

FINANCIAL RESULTS

At the time this is written, statistics of financial results of operation are available only for the first 11 months of 1946. A condensed income account for that period, compared with the corresponding months of 1945, 1944, and 1942, appears in Table IV. The year 1942 was the wartime year that produced the greatest net earnings in railroad history.

Total operating revenues declined by 15.6 per cent in the first 11 months of 1946, while operating expenses decreased only 4.6 per cent. As a result, net railway operating income, after paying operating expenses, taxes, and equipment and joint facility net rentals, declined 42.1 per cent below the same period of 1945, and net income, after interest and other fixed and contingent charges, decreased 61.1 per cent.

The effect of sharply rising operating costs is clearly reflected in a comparison of the 11-month results for 1946 with those of 1942. Notwithstanding the fact that total operating revenues in the 1946 period were greater than in the 1942 period, net railway operating income showed a reduction of more than 60 per cent and net income a drop of more than 75 per cent.

Even that picture of the sharp decline in net earnings fails to tell the whole story. The 1946 figures include nearly $100,000,000 of tax carry-back credits. This provision of the income tax law expired at the end of 1946, in so far as credits against excess profits taxes paid during the war years

TABLE IV

RAILROAD INCOME ACCOUNT

	First 11 Months			
	1946 (000,000)	1945 (000,000)	1944 (000,000)	1942 (000,000)
Operating revenues	$6,990	$8,285	$8,679	$6,763
Freight revenue	5,293	6,129	6,442	5,413
Passenger revenue	1,166	1,555	1,644	909
Operating expenses	5,808	6,087	5,726	4,170
Operating ratio—%	83.1	73.5	66.0	61.7
Taxes	528	1,146	1,735	1,119
Net railway operating income	516	891	1,033	1,310
Net income	197	507	623	823

are concerned, and will not be available in 1947.

RAILROAD LEGISLATION

Only one important piece of legislation affecting the railroads was enacted by the Congress in 1946—the Railroad Social Insurance Bill, also known as the Crosser Bill, signed by President Truman July 31, 1946. Enactment of the bill was vigorously opposed by the railroads, and other interests as well, because of its radical and far-reaching nature.

The act created a new system of annuities for survivors of railroad employees, increased the benefits payable under the railroad unemployment system, and applied the same schedule of benefits for unemployability due to sickness or injury from whatever cause. To cover the cost of this expanded program, the payroll tax rate paid by employers was raised from 6½ per cent to 8¾ per cent and that paid by employees from 3½ per cent to 5¾ per cent, effective Jan. 1, 1947. Based on current employment, the act increases railroad operating costs by approximately $90,000,000 annually.

Congress passed the Railroad Reorganization Bill, which dealt with reorganization of railroads in financial difficulty, through the process of voluntary agreement with their creditors and other security holders, in lieu of going through formal bankruptcy proceedings. However, President Truman vetoed the bill on the ground that it would not accomplish the designed purpose.

The Bulwinkle Bill, designed to harmonize the national transportation policy and the policy of the antitrust laws, was passed by the House of Representatives but failed to reach the floor of the Senate. The bill received extensive support from shippers, the Interstate Commerce Commission, railroads, and many others.

A bill to approve the 1941 agreement between the United States and Canada for construction of the St. Lawrence navigation and power project was reported favorably by the Senate Committee on Foreign Relations but did not come up for a vote on the floor of the Senate.

COURT ACTION

The United States Supreme Court had before it at the end of 1946 a number of matters of interest to the railroads. The Special Master appointed by the court in connection with the Georgia Antitrust Case received evidence during 1946 from the State of Georgia, complainant, and from the defendant railroads. Briefs were filed March 15, 1947, with reply briefs on April 1. Following oral arguments, the Master submitted to the court findings of fact and conclusions of law, together with a recommended decree.

The Supreme Court assigned the Class Rate Case (I.C.C. Dockets 28300 and 28310) for argument early in 1947. The decision of the Interstate Commerce Commission in those dockets was handed down May 15, 1945, ordering, among other things, an increase of 10 per cent in class rates in Official Territory and a reduction of 10 per cent in other territories east of the Rocky Mountains. Such changes in class rates were on an interim basis, pending subsequent establishment of a uniform freight classification and a uniform scale of class rates. Enforcement of the order was enjoined by the Federal District Court in northern New York. This action was appealed to the Supreme Court.

The decision of the Special Federal Court in Philadelphia, approving the sale of the sleeping car business of the Pullman Company to a group of railroads, was appealed by the Government and certain private interests. The Supreme Court has not yet set the date of hearing on this matter.

There was little change during 1946 in the status of the antitrust suit brought by the Department of Justice against the Association of American Railroads, the Western Association of Railway Executives, and others. The Government filed a bill of particulars Oct. 22, 1945, to which defendants filed answers March 3,

1946. The taking of evidence will begin on April 23, 1947.

RAILROAD COMMITTEE FOR THE STUDY OF TRANSPORTATION

The work of the several subcommittees of the Railroad Committee for the Study of Transportation was virtually completed in 1946. This is the committee of railroad men set up by the Association of American Railroads for the study of post-war prospects and problems. Some of the reports of the several subcommittees have been printed and distributed. There remains the task of consolidating these subcommittee reports into a final report of the committee, which will bring together in orderly sequence the results of the extensive research conducted by it into the details of the railroad plant and its operations, and prospective post-war developments. An early conclusion of the committee's work is anticipated.

JOHN J. PELLEY

The transportation world suffered a heavy loss in 1946 through the death of John J. Pelley Nov. 12. Mr. Pelley was the first president of the Association of American Railroads, holding the position from 1934 to the time of his death. He had a long and successful career in the railroad industry, and his wealth of experience and understanding was of incalculable value to the nation during the war period.

CONCLUSION

In many respects, the year 1946 was similar to 1919, the first complete post-war year following the First World War. In both those years, economic activity was greater than in any previous peacetime year, but was accompanied by rising wage rates and prices. In the earlier period, these trends continued in the second post-war year (1920) but the unbalances thus created in the national economy led to a depression in the third year (1921).

There now exists an adequate backlog of demand for goods to ensure an extended period of high industrial activity, but normal economic balances must be restored before the prospective benefits can be enjoyed.

HIGHWAYS

By THOMAS H. MACDONALD

COMMISSIONER OF PUBLIC ROADS, FEDERAL WORKS AGENCY

OBJECTIVES OF THE HIGHWAY PROGRAM

Roadbuilding activities in the United States during 1946 were retarded by unsettled economic conditions, high prices, and shortages of labor, materials, and equipment. Despite these handicaps, state and Federal agencies made a substantial beginning on the $3,000,000.000 post-war program authorized by the Federal-aid Highway Act of 1944.

The immediate objective of highway officials was the repair of heavily traveled highways which had become badly worn during the years of war activity. Replacement of obsolete surfaces had been stopped during those years, and maintenance was restricted to the most urgent repairs. Many highways had worn out under the ceaseless pounding of military traffic.

When wartime restrictions on roadbuilding operations were removed, shortly after V-J Day, state highway departments attacked the huge backlog of maintenance and surface replacement that had been deferred. At the same time steps were taken in every state to resume work on highway and bridge projects that had been suspended at the outbreak of war, and to get new projects under construction as quickly as possible. Numerous medium and small-size projects of particular urgency because of traffic conditions were placed under contract in many states during the closing months of 1945, and plans were made for contract lettings for major projects early in the 1946 construction season.

NATIONAL INTERSTATE HIGHWAY SYSTEM

Long-range planning under provisions of the Federal-aid Highway Act of 1944 calls for the development of a National Interstate Highway system connecting the principal cities and industrial areas throughout the country and the designation of a Federal-aid system of secondary or farm-to-market roads in each state. The proposed National Interstate Highway system will include crosstown expressways and circumferential routes in urban areas.

The act authorizes an appropriation of $225,000,000 in each of the first three post-war fiscal years to match state funds for improvements on rural and urban sections of the Federal-aid system; $150.000.000 for secondary roads, and $125.000.000 for work on sections of the Federal-aid system in urban areas.

The National Interstate Highway system will be limited to 40.000 miles in extent but will include the main highways in the Federal-aid system, as well as urban expressways and circumferential routes. No specific sum was authorized for development of the system; however, the act provides that funds authorized for projects on the regular Federal-aid system and for the improvement of Federal-aid routes in urban areas shall be available for work on the National Interstate system.

Summing up, the objectives of the current highway program are threefold: to improve existing routes in the Federal-aid system, to establish a National Interstate Highway system (including arterial thoroughfares in urban areas, on which extensive improvements will be made), and to designate in each state a system of secondary roads that will be improved with Federal assistance.

PROGRESS OF THE HIGHWAY PROGRAM

Highways completed with Federal funds totaled 2.964 miles during the fiscal year 1946, as compared with 4.011 miles in 1945, 5.695 miles in 1944, 8,445 miles in 1943, 10,178 miles in 1942, and 12,936 miles in 1941.

Completed highways consisted of 991 miles on the Federal-aid system, 294 miles of secondary or farm-to-market roads, 1,673 miles of access roads built for war purposes, and six miles of miscellaneous construction. Twenty-nine railroad grade crossings were eliminated, three obsolete structures were reconstructed, and 65 crossings were protected by signals or other devices. The total cost of all completed work was $103.812,655, of which $76,448,942 or 74 per cent was paid by the Federal Government.

Highway programs approved during the year amounted to $390,961,936 for proposed improvements on rural sections of the Federal-aid system, $156.115,814 for work on portions of the Federal-aid system in urban areas, and $225,452,796 for secondary roads.

Between Jan. 1 and Sept. 30, 1946, contracts were awarded for 2,857 Federal and Federal-aid highway projects estimated to cost $395,000.000. These contracts called for improvements on 14.383 miles of road in 48 states and the District of Columbia, and included projects in national forest and other Federal areas. Contracts awarded in the total Federal and state programs were for 36,840 miles of road to cost $574,000,000.

MAJOR ROUTES AND EXPRESS HIGHWAYS

Agreement between the states and the Public Roads Administration of the Federal Works Agency upon routes designated for inclusion in the National Interstate Highway system was expected by the end of the year, after careful consideration and coordination of state proposals. The mileage proposed by the various states considerably exceeded the legal limit of 40,000 miles, and in a number of instances the routes proposed by adjacent states did not meet at state boundaries. After eliminating routes which did not appear to be wholly justified and making necessary adjustments so that all routes would be continuous across state lines, there resulted a total of 37,324 miles in the system of main routes as integrated by the Public Roads Administration. The reserve of 2,676 miles will be assigned to circumferential and distribution routes in cities at a later time.

The National Interstate Highway system eventually will connect all our large cities and densely populated industrial areas with broad, modern highways over which traffic will flow freely. Urban sections of the system will pass directly through our largest cities on express routes to which access will be permitted only at selected points.

In the new plan of highway development the extension of major routes through cities as express highways is one of the most important features. The most serious traffic problems are in and near cities, and it is there that traffic accidents are most frequent. Improvements that will permit a free flow of traffic on principal routes through cities are essential, not only to complete a national system of highways but to prevent strangulation of the economic life of cities.

SECONDARY ROADS

During the 1946 fiscal year good progress was made by county, state and Federal officials in the selection of secondary road systems and a start was made on the construction program, despite adverse conditions. At the end of the fiscal year a total of 217,073 miles of road had been approved for inclusion in the Federal-aid secondary system, and a large mileage of additions to the system was under review.

No limit was placed upon the mileage of secondary road systems, but the states were urged to include only such mileage as could be adequately improved within a reasonable period of years and maintained with revenues that may be expected to accrue.

The improvement of secondary roads was well advanced in many states and begun in others before the war. Under earlier legislation, Federal-aid secondary road systems or partial systems had been selected and approved for 35 states. The Federal-aid Highway Act of 1944 requires that a system of secondary roads be selected in all states. The selection must be made in cooperation with local officials except in the few states in which all public roads are under direct control of the state highway departments.

The purpose of the legislation is to initiate a more comprehensive rural road program through the selection and improvement of a system of principal secondary roads to supplement the Federal-aid highway system in rural areas. Together, the two systems will form a closely integrated network of trunk routes and "feeder" roads.

NATIONAL FORESTS AND PARKS

During the war normal construction of highways in national forests and parks was stopped. A considerable portion of the technical personnel entered military service. Many of the men who remained were engaged in supervising the construction of access roads to sources of timber and mineral deposits needed for the war effort. Others were at work on war-connected projects such as the Alaska Highway, and roads to atomic plants and to other war establishments.

When the war ended, every available man was assigned to the preparation of plans for urgently needed improvements. These will be financed wholly by the Federal Government. The Federal-aid Highway Act of 1944 authorizes an appropriation of $25,000,000 for national forest highways, $4,250,000 for highways in national parks, and $10,000,000 for parkways, in each of the first three post-war fiscal years. An additional fund of $1,500,000 for the maintenance and reconstruction of forest highways was provided by the Department of Agriculture appropriation bill for the fiscal year ended June 30, 1946.

Over 80 per cent of the Forest Highway system consists of links in the Federal-aid and state systems. Completed portions of the system carry a considerable volume of traffic. The new funds will make it possible to modernize these roads and provide the same safety and facility of travel found on adjacent sections of main highways. Some new highways will be built, but emphasis will be on modernization of the older and most-used forest highways.

At the beginning of the 1946 construction season plans had been completed for projects that would absorb all national park and forest highway funds available for the fiscal year; however, only a few projects were advanced to the construction stage because of high prices and the reluctance of contractors to bid on jobs. Construction activities will be expanded when conditions improve.

MOTOR VEHICLE REGISTRATION

Despite limited production of new vehicles, the number of privately owned automobiles and trucks registered in 1946 was expected to reach a total of 32,511,000, an increase of 1,984,824 or 6.5 per cent over 1945 registrations. This figure, however, was 1,872,345 or 5.4 per cent fewer than the 34,383,345 privately owned automobiles and trucks registered in 1941, when motor vehicle registrations reached an all-time peak. It was estimated that 27,088,000 automobiles and 5,423,000 trucks would be registered in 1946, as compared with 25,691,434 automobile and 4,834,742 truck registrations in 1945. California, New York and Pennsylvania, in the order named, led all other states in motor vehicle registrations.

INTER-AMERICAN HIGHWAY

During the year moderate progress was made in the construction of the Inter-American Highway, which stretches from Laredo, Tex., through Mexico and the six Central American republics to Panama City, Panama, a distance of approximately 3,300 miles.

Work on the section through Mexico is directed and financed by the Mexican Government. In the Central American republics the United States is cooperating, through the Public Roads Administration, with the various governments in financing and constructing sections of the highway. Currently, assistance is being given from a fund of $20,000,000 authorized by the Act of Dec. 26, 1941. Financial aid from this country is limited to two-thirds of the cost.

Construction activities, both in Mexico and Central America, have been retarded by the difficulty of obtaining new roadbuilding equipment, spare parts, and supplies from the United States. Most of the equipment now in use has served beyond its economical life. Until this situation is remedied, progress will continue to lag.

From Laredo south through Mexico City and Oaxaca to Totolapa, a distance of about 1,126 miles, the highway has a continuously paved or all-weather surface over which travel is pleasant at all times. South of Totolapa there are stretches over which travel is possible in the dry season but they end with a jungle barrier that makes it impossible for the motorist to reach Guatemala.

There is considerable local travel on the highway in Guatemala, El Salvador, Honduras, and Nicaragua, but in the last two countries travel is difficult in the wet season.

Considerable progress was made during the year on sections of the highway in Costa Rica, but long gaps are still to be completed. It is not possible to reach Panama by overland travel through Costa Rica. In Panama, except for some 25 miles near the Costa Rican border on which no work has been done, the Inter-American Highway is passable at all times.

PAN-AMERICAN HIGHWAY

This highway coincides with the Inter-American Highway to Panama and extends down the west coast of South America, across the Andes to Buenos Aires, and northward to Rio de Janeiro. The section from the Colombia-Panama border to Buenos Aires is 5,400 miles in length. Local improvements were made during the year on portions of the highway, notably in Bolivia and Ecuador, but the highway as a whole is not yet suitable for tourist travel.

THE MOTOR BUS INDUSTRY

By Carl W. Stocks
Editor, *Bus Transportation*

POST-WAR FACTORS

Despite many misgivings as to the probable trend of riding, the bus industry in its first full post-war year of operation held close to the high level of riding that characterized its operation for the last several years. It will be some time well into the new year before the full figures of passengers carried on the city, city-suburban, and intercity lines are available, but as the year drew to a close there was every evidence that the final figures for 1946 would compare satisfactorily with the 1945 total of 9,742,000,000. The change was in the character of the riding rather than in the demand for service. This was accounted for largely by continued change from a wartime to a peacetime economy and led to the institution of many revisions in administrative and operating procedures by the carriers. There was, of course, great need on the part of the carriers for new vehicles for additions to the fleets and for replacement purposes. Despite the fact that strikes in the coal, steel, and automobile industries hampered the manufacturers, bus production set an all-time high of 24,174 vehicles, of which 12,025 were school buses, 11,635 common carriers, and 496 were for government agencies. The comparable total figure for 1945 was 17,651.

INCREASE IN TRUCKING LOADING

Again, in the truck industry, the full figures for the year will not be available until well into the new year. Here also the general trend has run counter to some of the predictions of a precipitate drop in loadings. There was a temporary slump in this industry in September caused by strikes, but in October two new records were established. The truck loading index figure, computed on the basis of the average monthly tonnage of the reporting carriers for the three-year period 1938-1940 as representing 100, climbed to 204 in October, the highest October index recorded since the American Trucking Association began keeping records in 1937. Moreover, the 204 index in October, following an identical 204 index for August, makes 1946 the first year of record in which the index has exceeded 200 in more than one month. The index has equalled or exceeded 200 on only two other occasions: 200 in April, 1943, and 205 in March, 1945. The average index for the first ten months of 1946 was 182. It is exceeded only by the average of 187 recorded in the first ten months of 1943. The average for the first ten months of 1945 was 179. The October volume represented an increase of 16.9 per cent.

This, then, is a measure of the extent to which the carrier industry conducted operations in the face of tremendous shortages of vehicles and parts, but at the same time it is a measure of the extent to which the manufacturers of vehicles and parts carried on in the face of strikes and in turn shortages of materials that enter into their products. The matter has been well expressed in the statement that the great cost of this labor orgy has been borne, first, by the public; second, by the operators; and, third, by the manufacturers themselves. One of the bright spots in the production figure, however, was the announcement in August that the supply of bus and truck tires had caught up with wartime shortages. Actual truck assembly in 1946 was 935,000, or 89 per cent of the 1941 figure of 1,042,085, but that figure included 219,000 military vehicles.

SHARPLY INCREASED COSTS

All the highway carriers had to contend against increased costs of vehicles, increased costs of materials and supplies, and increased wages. They were able to offset these added costs only in part by technological improvements in the conduct of their business. In general it may be said that labor and material costs spiralled dizzily upward faster than the increased revenues.

CHANGES IN BUS EQUIPMENT

In the bus field many notable and progressive innovations were introduced during the year. Not only were there new types of equipment, but there were notable changes in operating and administrative procedure. In San Antonio a new 36-passenger air-conditioned bus was placed in operation as the precursor of 100 more similar vehicles. There have been air-conditioned intercity coaches, but this was the first instance of a bus of this kind intended for city operation. Trolley buses intended for use in Atlanta are to be similarly air-conditioned. Another innovation was the prefabricated trolley bus tested in Toledo, but intended for use in Buenos Aires as part of an order for 200 vehicles. In the intercity bus field, Santa Fe Trailways unfolded for public use a new 60-foot articulated luxury coach, and in the spring Greyhound began experimental operation of a Sikorsky helicopter intended for air-bus service which in flights near Detroit landed on schedule to connect with the intercity buses.

CHANGES IN OPERATING AND ADMINISTRATIVE PROCEDURE

The last of the trolley cars in Manhattan are on the way out under a conversion to bus operation program of the Third Avenue Transit Corporation, calling for the expenditure of more than $10,000,000. Moreover, in New York City the Fifth Avenue Coach Company completed the plan under which the last of its open-top double-deck buses were retired from service, the change being celebrated in a ceremony on Dec. 29 in which officials of the company and invited guests participated. The only remaining street car lines in Manhattan are the Third Avenue line and the upper Broadway line. These are to be converted to bus operation in 1947. Among the cities which converted to all-bus operation during 1946 were Savannah, Albany, Troy, Worcester, Salt Lake City, Schenectady, and Fitchburg.

COMMUNITY TRANSIT

By Guy C. Hecker

Executive Manager, American Transit Association

TRAFFIC FACTORS

In 1946, the community transit systems of the country carried 23,500,000,000 passengers, thus, once again and quite unexpectedly, establishing a new peak of traffic. When traffic in 1945 reached 23,254,000,000 passengers, it was confidently believed that the top had been reached, that it would be a long time, if ever, before so many passengers would be carried in one year again. Conditions prevailing a year ago suggested that a recession was inevitable; in fact, there were indications that it had already begun. However, the situation did not work out as anticipated. Nothing particularly startling occurred nor is there anything now to indicate that there has been any fundamental change in the outlook. It appears, rather, that developments have been delayed; the expected denouement has been put off. Community transit travel in 1946, therefore, continued at its high wartime levels and even edged slightly higher.

The dominant factor in the situation has been the maintenance of a high level of industrial and business activity. There was a period of hesitation and uncertainty in the latter months of 1945 and the early months of 1946, and then production turned upward again. Employment climbed to record high levels and held steady there, and high employment with plentiful spending money spells heavy riding on transit lines.

Another factor influencing the volume of transit riding in 1946 to some extent was the slowness of the automobile industry in getting into full production. It is believed this factor was most potent in the smaller cities and towns where normally the registration of automobiles is most dense and their use most intensive. Whether the volume of transit riding affected by this factor is important in relation to the total volume of transit riding seems open to question however. More important is the increasing traffic congestion in city streets and the problem of parking. To relieve the congestion, more and more cities are restricting the parking privilege, and thus restricting the use of private automobiles. To the strain of driving in congested traffic is added the necessity of parking a considerable distance from one's destination or the expense of off-street parking.

With the exception of the surface street car lines, all types of community transit service experienced increases in passenger traffic. The decrease in street cars was caused by conversions to motor buses in a number of cities. A considerable part of the increase of the motor bus traffic has been due also to these conversions, the remainder to extensions of bus lines and the general upward trend of traffic.

The greatest increase in traffic occurred on the rapid transit lines. It can be attributed principally to the influence of the City of New York where transit experienced a mild boom owing to the high level of employment prevailing and to a post-

TRANSIT OPERATIONS IN 1946

	Calendar Year 1946 (Prelim. Estimate) (Millions)	Calendar Year 1945 (Millions)	Per Cent Change from 1945
Transit Passenger Traffic			
Surface Street Car	9,096	9,426	−3.50
Rapid Transit	2,860	2,698	+6.00
Trolley Coach	1,281	1,244	+2.97
Motor Bus	10,263	9,886	+3.81
Total	23,500	23,254	+1.06
Transit Vehicle Miles			
Surface Street Car	904.2	939.8	−3.79
Rapid Transit	457.7	458.4	− .15
Trolley Coach	142.0	133.3	+6.53
Motor Bus	1,796.1	1,722.3	+4.28
Total	3,300.0	3,253.8	+1.42
Transit Revenues			
Surface Street Cars	$ 540.3	$ 558.2	−3.21
Rapid Transit	161.6	151.3	+6.81
Trolley Coach	70.2	68.4	+2.63
Motor Bus	624.9	602.5	+3.72
Total	$1,397.0	$1,380.4	+1.20

war influx of conventions, commercial buyers, and pleasure seekers into the city.

1945-1946 TRANSIT TRAFFIC INDEX

(Av. 1936–40 = 100)

	1946 Index (Partly Estimated)	1945 Index
United States—total.....	180.9	179.0
Cities Over 1,000,000....	138.4	132.3
Cities 250,000–1,000,000..	200.6	203.6
Cities Less Than 250,000.	274.6	273.3

Increases occurred in the small cities and in the very large cities with over 1,000,000, population. The medium sized cities reported decreases. They had been the principal centers of war production and therefore experienced the greatest conversion difficulties, including strikes.

EQUIPMENT

The number of new transit vehicles of each type—street cars, buses, trolley coaches—delivered in 1946 is shown in the table below. While it is the largest number on record, it fell far short of the requirements of the industry. At the beginning of the year, the vehicle manufacturers planned and expected to deliver more than 16,000 new vehicles. The record shows they delivered only half of that number. Strikes and shortages of materials were responsible.

Inability to get all the new vehicles it needed and the further difficulty in getting the parts required to keep its older vehicles running steadily, was a serious handicap to the transit industry throughout 1946. It was unable to make the improvements in service that had been planned. While the wartime standards of service had been greatly improved, there was still overcrowding of vehicles in some places, and transit managers were subjected to a good deal of undeserved criticism. Traffic continued at wartime levels or higher, but many transit companies could get only enough new equipment to retire their oldest wornout vehicles and were unable to increase their service. Improvement in this situation is expected in 1947 as manufacturers increase production, but all transit equipment requirements will probably not be satisfied much before 1950.

LABOR

Wages and labor relations continued to be the number one problem in 1946. With the termination of government control, relations between management and union reverted to straight collective bargaining, and with the return of personnel from the armed services the managements strove to restore peacetime working conditions and eliminate excessive overtime, while the unions strove to maintain the workers' wartime take-home pay and to increase it despite the reduction in working hours. As a result, hourly wage rates soared. Further than that, total labor costs increased substantially and threatened to absorb a disproportionate share of the transit dollar of receipts. In 1946, the transit payroll increased 12 per cent and absorbed 51 per cent of operating revenues.

So long as transit traffic holds up or

ANNUAL TRANSIT VEHICLE PRODUCTION

	1939–40 Average	1941	1942	1943	1944	1945	1946*
Street Car...............	417	462	284	32	384	332	475
Rapid Transit............	83	0	0	0	0	0	0
Trolley Coach............	449	411	336	117	55	189	355
Motor Bus..............	3951	5600	7200	1251	3807	4441	7834
Total............	4900	6473	7820	1400	4146	4962	8664

* Preliminary estimate.

continues to increase, it is possible that it may continue to support its present wage structure. When traffic turns down, however, as it is bound to do at some time in the future, the situation will be serious. Transit managements are acutely conscious of the situation and are casting about for some means to alleviate it. Efforts are being made to reach some understanding with labor that will make possible an amicable adjustment of wages to the ability of the industry to pay when and as it becomes necessary.

There is some evidence that labor is also aware of the precarious nature of the situation and has been giving some thought to it. A recent editorial in a union paper pointed out to its readers that their future well-being depended upon transit's continued ability to maintain its earning power and that increased productivity on the part of the workers was essential to it. If this means what it implies, such a spirit of understanding and cooperation on both sides may make it possible for management and union labor to work out a satisfactory solution of their common problem.

FARES

Thirty-five companies were compelled by rising costs, declining revenues, or a combination of both, to raise their fares in 1946, and there were a number of applications for increases pending at the end of the year. While transit traffic as a whole increased in 1946, the traffic of many individual companies declined, in some instances quite sharply, owing for the most part to especially critical local conditions arising in the transition from war to peace. The experience of these companies is probably symptomatic of what may be expected on a larger scale if there should be a general decline in traffic. A general increase in fares would be the logical result.

It is of interest, and possibly of some significance, to note that three of the five principal municipally owned and operated transit systems in the United States are included in the group that raised fares in 1946. New York engaged in a heated debate concerning subway fares, and the decision was against an increase. These municipal systems have had to pay the highest wage rates in the country. It is not surprising, therefore, that they should also be among the first to raise fares or attempt to do so. Conditions that forced fare increases on municipal properties exist also on private properties, and the latter may be forced to follow the same course.

PUBLIC RELATIONS

During 1946, the Transit Industry for the first time, after 15 years of effort, was able to unite on a national effort for the entire industry. The medium was radio, and the vehicle originally selected was "Spotlight on America," a dramatization of human incidents in the news.

Transit's national radio program was presented over the coast to coast facilities of the Mutual Broadcasting System with an original sponsorship of 45 transit companies stretching from Boston to Honolulu. The list has been substantially increased since the first program was presented. The sponsoring companies operated 34 per cent of all transit vehicles in the United States.

The radio program had two national commercials each week, dealing with subjects of universal application to every transit company irrespective of size, type of operation, or geographical location. It also included a 60-second station cut-in commercial supplied by each company and delivered by the announcer of the local station, dealing with matters of purely local importance.

The national radio program has been a good start, but only a start, in presenting the problems as well as the sales advantages of the transit industry to the people of America. It does represent, however, the first step in bringing the industry together in a concerted attack both on the misinformation which causes concern to all transit properties, as well as on those problems which can best be solved by the combined efforts of a united industry.

USE OF RADIO IN TRANSIT OPERATIONS

As time goes on, more and more effective use of shortwave two-way radio facilities is being made by transit operating companies to speed trouble-calls and otherwise to maintain and improve service. At the present time, more than 30 transit companies are using radio for such purposes, and it is anticipated that additional companies will take advantage of this modern aid to supervision as soon as radio equipment for such service becomes more readily available.

In 1938, the Federal Communications Commission gave official recognition to the needs of the transit industry by permitting the use of so-called special emergency stations.

In 1943, development in the art of radio and other circumstances made it necessary for the FCC to reopen the entire frequency allocations plan. The transit industry obtained recognition of its needs for broadened radio facilities as being in the public interest. On Sept. 9, 1946, the Commission made available a new class of radio station for transit utilities, on frequencies to be shared only with other services which operate primarily outside urban areas so that there should be a minimum of interference.

DEVELOPMENT OF OBJECTIVES IN MOTOR COACH DESIGN

Committees within the transit industry, representing all interested groups. have been active for several years in the development of improved motor bus equipment for urban service. Beginning early in 1944, it was felt that an expression of the views of transit operating companies on the design and equipment of post-war models of buses, based on the experience of these companies in the operation and maintenance of current models, would be most helpful and should be brought to the attention of the bus builders.

Two years' cooperative work by groups representing both the maintenance and the operating departments of transit companies, together with representatives of manufacturers, has resulted in a comprehensive statement of "Objectives" which has been of material assistance to the manufacturers in their efforts to provide what the industry wants. All of the Objectives have by no means been achieved, but there is evidence that serious efforts are being made to accomplish most of them in the shortest possible time. Current models of buses now coming off the assembly lines incorporate many of the Objectives.

SERVICE IMPROVEMENTS

Transit management is keenly aware of its responsibility to improve service and experimented during the year with various forms of service designed to meet the needs of the public better. Transit companies in some cities are now providing express bus service on certain routes with substantial time-saving to passengers in traveling between residential and business districts. The inbound express buses are operated with local stops at the outer ends of the lines to take on passengers. Then at designated points the buses run express to the downtown business districts, where they operate locally to discharge passengers.

The time-saving with this improved type of service is sufficient to attract many people who have been accustomed to use their automobiles to and from downtown districts, thus contributing to the relief of traffic congestion.

Transit companies in several cities are also experimenting successfully with parking lots located on the perimeters of the downtown districts and with special bus services between the parking lots and shopping and other business centers. Usually, patrons purchase a combination ticket covering the parking charge and the round-trip bus ride.

Experience indicates that, if such parking facilities are properly located with respect to the main arteries leading into the center of a city and a satisfactory bus service is provided, the number of automobiles in and out of the business district can be materially reduced.

THE MERCHANT MARINE

By John C. Niedermair
Bureau of Ships, Navy Department

SHIPBUILDING CONTRACTS

In January of 1946, it was expected that some of the most important shipbuilding contracts ever placed in the United States would be awarded during the year. The principal contracts pending at that time were for large high-speed passenger-carrying ships, combination passenger and cargo ships, intermediate size tankers, and special design cargo vessels. However, as the year progressed, the national policy was changed by President Truman to one of extreme economy with regard to expenditures for new merchant shipbuilding. There were in existence on Jan. 1, 1946, shipbuilding contracts for private American operators covering 62 large ships of 479,136 gross tons and 622,350 deadweight tons, with propulsion machinery totaling 502,250 horsepower. Seventeen of these ships were combination passenger and cargo carriers, 13 were all-refrigerated cargo ships, and 25 were cargo ships. All these ships were to be completed during the year. The number of vessels under contract by January, for both private interests and the United States Maritime Commission, totaled 507 vessels of all types, representing 1,038,000 gross tons and 1,500,000 deadweight tons.

SHIP PRODUCTION

As the final complete records for 1945 became available, it was noted that for the fourth successive year the production of large steel merchant vessels in the United States exceeded in number and tonnage all previous pre-war annual shipbuilding records. The total produced during 1945 was considerably less than the record-breaking year of 1943. It will be noted from the table that 1,041 steel self-propelled merchant vessels of over 2,000 gross tons each were completed and delivered in 1945. The combined tonnage of these vessels totaled 7,614,898 gross tons and 10,304,644 deadweight tons, and the propulsive plants totaled 5,964,180 shaft horsepower. The tremendous wartime merchant shipbuilding program was completed by January 1946.

American shipyards produced, during the four war years, 1942-1945 inclusive, the grand total of 4,889 steel merchant vessels of over 2,000 tons each. The deadweight capacity of these vessels was 52,875,603 tons, the gross tonnage totaled 36,896,538 tons, and the aggregate shaft horsepower equalled 21,598,100. The production record for these four years was as follows:

	Cargo Ships	Pass.-Trans-ports	Tankers	Total
1942	652	11	61	724
1943	1,410	20	231	1,661
1944	1,175	48	240	1,463
1945	807	46	188	1,041

In contrast the shipbuilding production record from Jan. 1 to Dec. 1, 1946 was 76 vessels totaling 594,088 gross tons and 870,818 deadweight tons.

THE RECONVERTED *AMERICA*

During the year many conversion jobs were completed. The most outstanding job of this nature was the conversion of the United States Lines transatlantic liner *America* from her wartime service as a transport. This vessel was originally delivered to the United States Lines on July 27, 1940 when she was widely acclaimed as setting a new standard of safety, comfort, and luxury. On June 15, 1941 the U. S. Navy commissioned the ship as a "Convoy Unit Loaded Transport," named *USS West Point*. As a transport, the ship had facilities for over 8,000 troops, an anti-aircraft battery of 28 tons, with attendant ammunition stowage and other wartime features. The *America's* war record included 27 Atlantic crossings between June 27, 1944 and June 24, 1945 and during this time she carried more than 140,000 passengers. During her wartime service, the *America* traveled over 436,000 nautical miles and carried more than 500,000 passengers. No structural defects, major or minor, had been reported, and the engines had run since 1941 without being overhauled by a shipyard. On Feb. 28, 1946 the *West Point's* war work was done and she returned to the Newport News Shipbuilding and Dry Dock Company, her original builders, for reconversion to peacetime service as a passenger liner. On Nov. 14, 1946 the *America* sailed from New York on her first transatlantic voyage as a passenger liner.

THE WORLD FLEET OF MERCHANT VESSELS

A comprehensive survey was made by the Maritime Commission showing the number and tonnage of seagoing steel merchant vessels over 1,000 gross tons each, flying the flag of each maritime nation of the world as of June 30, 1946. The figures covering the total merchant vessels now in existence when compared with pre-war (Sept. 1, 1939) revealed the interesting fact that, while the total number has declined from 12,798 to 12,445, about 4 per cent, the deadweight tonnage has increased from 80,601,000 to 99,220,000 tons, or about 23 per cent. This large percentage of increase in carrying capacity of the world fleet was mostly accomplished in the relatively short period of time encompassed by the years 1940 through 1945, while at the same time great losses in merchant vessels, mainly pre-war built, were being incurred. The tremendous production of large deadweight carrier merchant vessels by the shipyards of the United States during the war years is the main contributing reason why the carrying capacity of the world fleet is now greater than pre-war.

It must be borne in mind, when analyzing the status of the world fleet, that the balance which existed before the war, based upon the law of supply and demand for individual specific types and sizes, has been destroyed because of the necessity for producing during the war large deadweight carriers in great numbers, such as the Liberty type of ship produced in the United States, Canada, and Great Britain. These vessels have a deadweight tonnage of over 10,500 tons. In the years immediately preceding the outbreak of war there existed in international trade and on the deep sea trade routes of the world only about 1,100 cargo vessels of this size or larger. There are now in existence more than 3,500 vessels of this size, clearly indicating a great surplus of vessels in this category, which surplus can not be employed in normal times. This presages the laying up or scrapping of many large vessels in the next few years, as soon as UNRRA and other government shipments cease.

WORLD SUPPLY OF TANKERS

The world supply of tankers has increased sharply, the intensive war building program in the United States and Great Britain being responsible for a 17 per cent increase in numbers and a 31 per cent and 35 per cent increase in gross and deadweight tonnage, respectively, over the pre-war totals; in fact, the tank ships now existing represent 16 per cent of the total number of merchant ships afloat and more than 23 per cent of the total deadweight tonnage. The current world tanker fleet totals 1,981 units of 15,066,295 gross tons and 23,234,600 deadweight tons, whereas before the war the total was 1,700 vessels of 11,485,161 gross tons and 17,235,200 deadweight tons. The total carrying capacity of the current world tanker fleet is far greater than can be employed in peacetime, and many vessels will have to be laid up. Another factor which will force tankers into lay-up or scrapping is the approximately 25 per cent increase in average speed and average deadweight tonnage incorporated in the more than 800 new tank ships constructed during the war, mainly by American shipyards. These will make possible more voyages per year per ship and more oil per trip, thus allowing an operator to move the same tonnage of oil as pre-war with fewer vessels.

WORLD SUPPLY OF DRY CARGO CARRIERS

While the total number of cargo ships now in existence shows an increase of only 6 per cent in number over the pre-war supply, as will be noted from the following table, the total gross and deadweight tonnage has increased by 51 per cent and 39 per cent, respectively.

PER CENT CHANGE IN WORLD TONNAGE BY VESSEL TYPE

(1,000 gross tons and over)

September 1, 1939–June 30, 1946

Type	Per Cent Increase or Decrease		
	Gross Tons	Deadweight	Number
Total	+20	+23	−4
Combination	−48	−51	−50
Combination refrig.	−26	−28	−32
Cargo ships	+51	+39	+6
Refrigerated ships	−26	−28	−28
Bulk carriers	−33	−34	−31
Tankers	+31	+35	+17

Thus, the cargo carrying capacity is far in excess of what could normally be employed. However, with the eventual retirement of a large proportion of the slow-speed large deadweight carriers of the Liberty type, a better balance will be achieved.

A considerable shortage in combination passenger and cargo vessels exists owing to a decrease of 50 per cent in number over pre-war figures. Combination passenger and refrigerated cargo vessels have decreased by 32 per cent, and refrigerated cargo ships show a decrease of 28 per cent in number. Bulk cargo carriers have decreased by 31 per cent in number. Thus, a definite shortage exists in the category of special types of vessels designed for specific purposes, while there is an oversupply of general cargo ships and tankers. The world fleet will be balanced only by the construction of many of these special types and the scrapping or permanent lay-up of the types now in excess. Shipbuilding in foreign countries and in the United States reflects the demand for these special types.

UNITED STATES FLAG VESSELS

The following table shows the shift in national control of merchant fleets during the war period owing to losses and new construction. Now controlled by the United States under the American flag are 4,861 vessels of 35,363,598 gross tons and 50,389,300 deadweight tons. To this total must be added 526 additional vessels of 3,223,571 gross tons and 4,681,500 deadweight tons owned by the Maritime Commission but flying the flag of foreign nations under Lend Lease terms, etc., making a grand total of 5,387 vessels of 38,587,169 gross tons and 55,070,800 deadweight tons. This is 42 per cent of the total vessels afloat in the world and 55 per cent of the total deadweight tonnage.

This great balance of power in favor of the United States, however, can not be but a temporary advantage. It is one thing to own property and another to be able to employ and operate these tools profitably. In a little over one year, almost 1,700 of these vessels were laid up and as UNRRA and other government-controlled shipments decline many additional vessels will be forced into lay-up. A program for scrapping much of this tonnage, involving approximately 1,000 ships, will wipe out of existence almost 25 per cent of the existing American flag tonnage. About 125 vessels have been sold for scrapping since the end of the war.

WORLD MERCHANT FLEETS—PRE-WAR AND POST-WAR

Number, gross and deadweight tonnage of seagoing iron and steel steam and motor merchant type vessels of 1,000 gross tons and over.

	Merchant Fleet as of September 1, 1939			Merchant Fleet as of June 30, 1946		
	No.	Gross Tons	Dwt. Tons	No.	Gross Tons	Dwt. Tons
Total all Flags	12,798	58,270,374	80,600,600	12,445	71,000,408	99,219,900
United States	1,379	8,126,766	11,681,700	4,861	35,363,598	50,389,300
British Empire	3,319	17,770,919	24,053,700	3,159	18,064,293	24,009,600
Argentina	45	196,627	267,700	64	310,623	430,000
Belgium	72	356,362	494,000	46	242,670	341,600
Brazil	122	413,646	541,600	136	490,423	669,700
Bulgaria	8	22,306	29,700			
Chile	60	153,959	180,900	46	151,277	196,800
China	100	204,062	276,000	73	246,479	344,300
Colombia				2	7,354	11,100
Costa Rica				1	1,068	1,500
Cuba	12	17,504	21,700	8	11,738	14,400
Denmark	379	1,041,756	1,575,800	208	640,864	952,600
Danzig	4	5,162	7,400			
Dominican Republic	1	1,973	2,200			
Ecuador				1	1,120	1,300
Egypt	23	98,177	128,000	7	19,119	29,100
Eire				13	33,109	52,300
Estonia	94	176,376	274,400	13	21,209	30,900
Finland	232	530,285	826,000	125	252,761	372,000
France	555	2,678,435	2,998,800	262	1,370,836	1,612,800
Germany	854	3,915,978	5,177,100	242	800,590	1,160,100
Greece	436	1,697,986	2,791,000	146	619,320	1,006,200
Greenland				1	1,151	900
Honduras	27	82,068	90,500	34	140,553	167,900
Hungary	6	22,748	39,900	1	1,022	1,500
Iceland				5	7,245	7,900
Italy	667	3,178,120	3,910,800	123	576,199	691,700
Japan	1,180	5,102,346	7,145,400	327	1,085,969	1,432,100
Latvia	73	199,058	325,600	18	46,013	73,400
Lithuania	3	4,330	6,800			
Mexico	10	23,815	31,600	17	79,336	118,800
Netherlands	537	2,670,149	3,424,600	291	1,591,103	2,035,800
Nicaragua	2	3,023	4,200	1	1,109	1,600
Norway	1,072	4,499,086	6,931,200	607	2,933,972	4,477,000
Palestine	2	4,147	7,000	5	9,809	14,300
Panama	130	719,041	1,105,600	164	868,855	1,329,000
Peru	7	25,834	31,100	10	37,648	46,200
Philippines	33	82,695	105,200	17	46,780	65,000
Poland	31	113,644	101,200	28	93,746	128,200
Portugal	54	197,307	263,200	66	262,329	364,000
Rumania	25	101,807	129,000	6	26,995	18,400
Siam	2	2,622	2,000	1	1,311	1,000
Spain	217	749,681	1,051,700	257	879,286	1,253,100
Sweden	484	1,311,763	2,033,100	443	1,437,535	2,204,000
Switzerland				7	32,690	50,900
Turkey	67	173,847	223,800	58	151,148	192,000
Uruguay	5	13,791	14,300	3	11,989	18,900
U.S.S.R.	354	1,135,783	1,577,900	488	1,851,675	2,626,700
Venezuela	27	70,089	93,200	28	71,613	97,500
Yugoslavia	98	375,811	604,000	26	104,926	176,500

Included in above figures but excluded from the United States are U. S. government owned merchant vessels operating under the foreign flags shown in table on page 560.

Excludes vessels on the Great Lakes and Inland Waterways and special types such as channel vessels, ice-breakers, cable ships, etc., and vessels owned by the U. S. Army and Navy.

Further depletion of American flag tonnage will develop as sales of government-owned tonnage to foreign flag under the Ship Sales Act of 1946 gains momentum. Applications from foreigners for the purchase of 227 ships have been approved out of a total of 641 applications. In addition

	No.	Gross Tons	Dwt. Tons
Total	526	3,223,571	4,681,500
British Empire	341	2,008,885	2,842,200
Belgium	7	50,327	74,900
Brazil	1	6,937	4,400
Chile	4	21,257	32,600
China	11	79,071	118,000
France	13	93,445	139,400
Greece	14	100,771	150,500
Honduras	2	6,536	10,200
Japan	1	3,252	5,400
Netherlands	6	28,202	42,300
Norway	23	181,923	280,400
Panama	3	14,373	23,700
Poland	5	14,633	21,500
U.S.S.R.	95	613,959	936,000

Source: United States Maritime Commission.

a number of old privately owned American flag vessels were sold to foreign interests in 1946.

Eliminating from the above mentioned grand total of 5,387 American vessels the 2,500 Liberty and 531 Victory ships built during the war, and the 961 tankers under the American flag or on lend lease, a balance of only 1,395 vessels remains which can be called competitive type earning tools. Of these there are only about 750 really high-class dry cargo and passenger liners which could be used on competitive trade routes. These are the vessels American operators will be using to compete with the great tonnage of post-war ships now being constructed in British, Swedish, and other foreign shipyards. Facts such as these will have to be faced by the Maritime Commission in carrying out the mandate of Congress as expressed in the Merchant Marine Act of 1936. The resumption of building of special types of merchant vessels designed to fit the requirements of specific trade routes will be necessary. A well-regulated plan, such as embarked upon before the war calling for the building of 50 ships a year, should be reinstated.

AMERICAN TANKERS

Flying the American flag are 914 tank ships of 8,083,190 gross tons and 12,916,100 deadweight tons. In addition, 47 tankers of 218,420 gross tons and 340,400 deadweight tons owned by the United States Government are still employed by foreign nations under lend lease terms and flying foreign flags, making a total of 961 tankers of 8,301,610 gross tons and 13,256,500 deadweight tons. This represents 48 per cent of the total world supply of tankers by number 55 per cent of the gross tonnage and 57 per cent of the deadweight tonnage, whereas prior to the war there existed under the American flag about 25 per cent of the total number and tonnage of the tankers then in existence. The fleet then totaled 403 vessels of 4,477,100 deadweight tons. A number of these pre-war built tankers have been sunk and others scrapped.

At the moment the United States has the finest and largest tanker fleet ever to exist, with a higher average speed and a greater average carrying capacity than any other national tanker fleet. However, this total American flag tanker fleet is more than twice as great in number and three times as great in deadweight tonnage than the fleet that could be profitably employed before the war, most of which fleet operated in the domestic trade and comparatively little internationally. With a 25 per cent increase in average speed and average carrying capacity, this new American tanker fleet has a yearly transportation capacity far greater than could ever be utilized. However, a few tankers will be sold abroad, but not enough will be disposed of in this manner to avoid a large percentage being laid up. More than 350 tankers are now in the government laid-up fleet sites. Some few tankers are being sold for scrapping, but many more of the old pre-war vessels will have to be disposed of in this manner.

AMERICAN DRY CARGO VESSELS AND PASSENGER LINERS

The American flag combination passenger and cargo vessels have shrunk from the pre-war figure of 170 of 1,390,640 gross tons to 95 of 942,483 gross tons, including those now out on lend lease and combination passenger and refrigerated vessels. This is an important type of vessel in any large national merchant fleet for commercial purposes and for national defense and offense. The deficit existing in the American flag fleet will not be made up by the few passenger ships now being constructed or by the few large liners projected by the Maritime Commission. Emergency conversion of large cargo vessels to troop transports during the war temporarily answered the purpose but were far from ideal in troop capacity and speed of transport. Large British, French, and Italian liners had to be employed for the transportation of American troops in the recent war, though not to the same extent as in the First World War.

Refrigerated cargo vessels under the American flag have increased from a pre-war figure of 29 of 128,182 gross tons and 145,800 deadweight tons to 52 of 273,197 gross tons and 303,700 deadweight tons, more than doubling the carrying capacity available. Additional vessels are now being constructed which will increase these totals slightly.

American flag bulk carriers have increased in number and tonnage from the pre-war figure of 67 vessels of 326,670 gross tons and 569,900 deadweight tons to 94 vessels of 473,467 gross tons and 794,000 deadweight tons, including those under foreign flag on lend lease terms. It is doubtful whether American interests can employ this greatly increased amount of bulk cargo tonnage in normal times. However, some few old ships of this type are scheduled for scrapping.

The great increase in American flag tonnage has occurred in the general cargo ship types. Before the war there were 763 American cargo ships of 3,814,804 gross tons and 5,828,600 deadweight tons. There are now 4,186 vessels of 28,596,415 gross tons and 40,093,300 deadweight tons, including those operating under lend lease by foreign nations. This is an increase of 3,423 vessels and over 34,000,000 deadweight tons. However, this segment of the American merchant marine will eventually be reduced through the sale to foreign flags, scrapping and permanent lay-up so that the total will again approach the pre-war figure. The comparatively few C-type standard cargo ships will be the main components of the American flag cargo ship fleet unless the Maritime Commission resumes its pre-war 50 ships a year building program.

BRITISH FLAG AND OTHER NATIONAL FLEETS

Approximately three-quarters of the world merchant vessels are now owned or controlled by American and British interests. The great fleets previously operated by German, Japanese, Italian, Norwegian, and French interests have been largely destroyed. The fleets of the three Axis powers at present are negligible and probably will continue so for some years to come. The fleets of the Allied powers, except the United States, and of neutrals were badly depleted during the war and can only be restored over a period of years. However, the merchant fleets of Sweden and Russia show an increase of 8 and 60 per cent, respectively, in deadweight tonnage. The increase in the Russian fleet is owing to the acquisition of Axis power tonnage.

At present the British Empire fleet totals 2,818 vessels of 16,055,408 gross tons and 21,167,400 deadweight tons, excluding American-owned tonnage being operated under lend lease. This compares with a pre-war total of 3,424 vessels of 18,023,953 gross tons and 24,174,000 deadweight tons. However, British shipyards are now operating at a rate variously estimated to produce 1,500,000 to 2,000,000 gross tons per year of special types, and the pre-war figures should soon be matched.

STATUS OF DOMESTIC DRY CARGO SERVICE

The National Federation of American Shipping in a recent report stated that unless the Interstate Commerce Commission acted promptly to establish compensatory tariffs which will attract domestic shipowners to re-establish former services, the domestic shipping trade will be destroyed. The

Federation stated that practically all dry cargo vessels now employed in domestic shipping are owned by the United States Maritime Commission.

The Federation considers it doubtful that the domestic shipping vessels will carry as much as 3,000,000 tons of cargo this year, compared to the 24,037,000 tons carried in 1939, by privately owned and operated domestic vessels. The present gloomy outlook for domestic dry cargo operation is owing almost entirely to abnormally depressed and non-compensatory rates. These factors were pointed out by the Senate Commerce Committee in December, 1945, again in March, 1946, before the House Merchant Marine and Fisheries Committee, and in petitions from War Shipping Administration, as well as from many other organizations and individual companies. Meanwhile, the nation is facing one of the most acute transportation crises in history. The reconversion program is being seriously retarded by the lack of transportation facilities. An important part of this crisis could have been met and solved had domestic shipping been reestablished on a compensatory basis.

As an example of the carrying capacity of domestic shipping, in terms of dry cargo vessels only, the Federation stated that in 1939 private intercoastal shipowners used 148 ships which carried nearly 7,000,000 tons of freight. At present, the Maritime Commission is employing about 40 per cent of that number which may carry less than 2,500,000 tons of freight this year. This is about 30 per cent of the cargo moved intercoastally in 1939, despite the fact that hundreds of suitable ships would be available if the rate structure were such as to attract private shipowners to utilize the vessels.

The coastwise dry cargo service presents an even poorer picture. At present only 10.5 per cent of the number of ships employed in the coastwise trades in 1939 are now in similar service. These 21 vessels may carry substantially less than 1,000,000 tons of cargo this year, compared with the 17,083,000 tons carried by the 200 dry cargo ships owned and operated by private enterprise in 1939.

It was further emphasized that, unless action is forthcoming soon, domestic dry cargo shipping services will be eliminated, and the shipping policies expressed by Congress will be defeated. A significant aspect of this situation is the curtailment of employment for seamen and longshore labor. Employment opportunities in the domestic shipping trades are decreasing in direct ratio to the tons handled. The common outlook for the operators, the union membership and the national defense is therefore a most dismal one.

SALE OF WAR-BUILT SHIPS

A return to the Government of more than $1,000,000,000 on sales of war-built merchant vessels under the Ship Sales Act of 1946 is in sight, the United States Maritime Commission told Congress. The forecast was made in the quarterly report on progress in disposition of the vast fleet constructed between Pearl Harbor and V-J Day, in which Vice Admiral William W. Smith, U. S. N. (retired), chairman of the Commission, stated applications for the purchase of 385 vessels at a total cost of $335,000,000 were approved in the three months ended Sept. 30. With 843 applications already on file still to be acted upon, a total return of more than $1,000,000,000 seems assured.

Of the 385 sales approved 158 ships, including many of the more desirable types, went to American operators, 184 to foreign governments, and 43 to foreign citizens. Most foreign sales have consisted of vessels in large supply, such as Libertys and Victorys. France and Italy have been approved for sale of 75 and 50 Liberty ships, respectively, The Netherlands 45, and Norway 14 of various types. It is expected that within a reasonably short period some 400 ships will be disposed of to American purchasers and 800 abroad.

PACIFIC TRADE ROUTE SUBSIDIES

The largest public hearings to be held in Washington on world shipping since before Pearl Harbor began on Aug. 17, when the United States Maritime Commission launched intensive examination of the needs of American steamship companies for operating-differential subsidies. The hearings dealt with trans-Pacific trade routes exclusively.

The subsidies, suspended since soon after this country entered the Second World War, are authorized under the Merchant Marine Act of 1936 to enable American steamship companies to compete with lower cost foreign competition in overseas commerce. Before Pearl Harbor, 12 operators were engaged in essential world service with the aid of subsidies. These companies are the American Export Lines, Inc.; American Mail Line, Ltd.; American President Lines, Ltd.; American South African Line, Inc.; Grace Line, Inc.; Lykes Bros. Steamship Company, Inc.; Mississippi Shipping Co.; Moore McCormack Lines, Inc.; New York and Cuba Mail Steamship Co.; Oceanic Steamship Co.; Seas Shipping Co., Inc.; and United States Lines. All are eligible for renewal of subsidies as of Aug. 1 upon proof of need for the assistance.

Nine operators have filed applications for operating-differential subsidies, or modifications, or extensions of subsidized services in the Pacific. They are American Export, American Mail, American-Hawaiian Steamship Co., American President, Lykes Bros., Olympic Steamship Co., Oceanic Steamship Co., States Steamship Co., and United States Lines. The Grace Line, Inc., has requested permission to inaugurate a Far East service but has not indicated that it will seek a subsidy.

Several other operators having an interest in Pacific commerce were represented at the hearing as interveners. Among them were the Waterman Steamship Corp., Isthmian Steamship Co., Pacific Far East Line, and Pacific Transport Lines.

In the five years that the operating-differential subsidies were in effect before the war they totaled $49,000,000 of which some $30,000,000 had accrued as recapture to the Government.

COMMERCIAL AVIATION

By Andrew F. Haiduck

General Manager, Duramold Division,
Fairchild Engine and Airplane Corporation

GENERAL

The first full year after the war turned out to be the biggest in the history of commercial aviation, with light plane manufacturing and airline expansion setting the pace. Personal plane deliveries totaled approximately 34,560 in 1946, and certificated domestic and international air carriers flew approximately 7,258,000,000 passenger miles and carried 13,819,000 passengers, up 78 per cent over 1945.

The number of registered aircraft more than doubled in 1946 over 1945, from 37,789 to 85,000. The number of certificated pilots likewise rose from 296,895 to an estimated 400,000. Also in 1946, about 170,000 student pilot certificates were issued as against 77,188 in 1945.

While the effect of the 5-cent air mail rate could not be exactly determined towards the end of the year, the air mail ton-miles for the first nine months dropped almost 50 per cent under the amount for the same period in 1945. During the same interval, however, air express and freight ton-miles rose from a figure of 17,094,780 in 1945 to 23,041,708 ton-miles in the 1946 period, a 35 per cent increase.

Charter non-scheduled operations both in passenger and freight categories increased by leaps and bounds as indicated by the 3,061 air services which applied for operating certificates. Considerable controversy developed towards the end of the year relative to policy and long-range prospects for this young upstart. No statistics were available to measure its meteoric growth.

SAFETY RECORD

The tremendous surge in traffic on regularly scheduled certificated airlines was accompanied by a greatly improved record with respect to safety. Passenger fatalities in 1946 were 147 per 100,000,000 passengers compared to a 1945 rate of 231. However, the first few weeks in January, 1947 witnessed several fatal crashes which caused considerable agitation for increased safety provisions such as radar and ground-controlled approach procedures. In this connection, the annual Collier Trophy Award went to Dr. Luis W. Alvarez for his development of this type of landing procedure under conditions of practically no visibility.

PASSENGER REVENUE

Passenger fares remained substantially at 4½ cents per mile as in 1945. However, the faster transcontinental services using such new equipment as the Constellation commanded an additional premium of approximately 20 per cent. As in the case of crack trains of the railroads, it is expected that the fast through flights will continue to command a premium. For the first time in years, a substantial reduction of passenger load factor was in evidence the first nine months of the year. Whereas the load factor had been 88.76 for the first nine months of 1945, the same period in 1946 showed only a figure of 82.87. Passenger revenue continued to be the largest source of revenue for the airlines. constituting approximately 88 per cent of the total. Air mail represented only 6 per cent of the total revenue, whereas freight and express accounted for 1½ per cent.

PRODUCTION OF PERSONAL PLANES

The manufacture of personal aircraft broke all records for number of planes constructed in October when 4,582 were delivered with a total value of $11,184,000. However, November deliveries dropped to 2,763, and December was even smaller. The total for the year was approximately 34,560 airplanes valued at $1,000,000,000. The greatest number ever produced in previous years was 7,000. The rather sharp reduction in production in the last two months of the year caused considerable speculation relative to the market for personal planes in 1947.

RESEARCH

Basic as well as flight research was directed principally in the direction of guided missiles and supersonic flight. This naturally included power plant research on ramjet, rocket, and jet motors. The predictions include such items as super-rockets with ranges from 3,000 to 5,000 miles, traveling at speeds of 1,000 to 3,000 miles per hour. The first powered flight of the Bell XS-1, a rocket propelled aircraft, marked the first stage in the attempt to reach speeds up to 1,700 miles per hour.

SCHEDULED AIR TRANSPORTATION MILEAGE

Domestic revenue miles flown in 1946 were estimated at 300,000,000 miles, a 43 per cent increase over 1945 operations. The estimated total is derived from the sum of actual operations for the first nine months of the year and an estimate of the last three months' operations. Revenue passenger miles for the year estimated on the same basis totaled over 6,000,000.-000, a 70 per cent increase over 1945. Exactly 96.53 per cent of the 228,010,101 miles scheduled in the first nine months of 1946 were flown. This percentage is somewhat better than the 95.04 per cent for the 1945 period. The 1946 total for miles flown in the first nine months by the domestic air carriers was 240,981,535, a 54 per cent increase over the 1945 figure for the same period, *i.e.* 156,385,140 miles.

Approximately 67,000,000 miles were flown on international routes, an 88 per cent increase over 1945. Passenger miles on foreign extensions reached

1,000,000,000, up 140 per cent over the previous year. International route miles totaled 175,000, an increase of 68,000 over the previous year. Express and freight ton miles increased 175 per cent, whereas air mail ton-miles showed a 30 per cent rise. The 1946 ton-mile figures were, respectively, 24,000,000 and 6,000,000.

The domestic network of airway route miles reached the all-time high of 90,000 miles, an increase of 33 per cent over the 1945 figure of 68,000 miles. As of Dec. 15, 1946, there were 816 aircraft in use, of which 655 were in domestic use and 161 on the international runs. The 816 represents a 65 per cent increase over the 495 in use on Dec. 15, 1945. Seating capacity, however, gained about 125 per cent, reflecting the usage of the larger airplanes, such as the DC-4 and the Constellation. Total number of seats available in December was 25.541 roughly or about 50 per cent of the total predicted in 1945.

PASSENGERS, SCHEDULES, AND EQUIPMENT

The number of revenue passengers carried during 1946 in domestic operations was 13,000,000, an increase of 78 per cent. This sharp gain was registered despite the fact that the 1945 figure was swelled considerably by redeployment of personnel by both Army and Navy. At the end of the year, the seating capacity seemed adequate to handle present needs. Revenue passengers carried on the American-operated foreign extensions reached the figure of 1,000,000, 118 per cent increase. The load factor showed the greatest drop in years when it reached 82.87, a reduction of 5.89 under the figure for 1945. This was to be expected in view of the greater number of seats available. However, it is a vital factor in profitable operations for the airlines, and, no doubt, the days of 90 per cent load factors are gone for some time to come. Revenue passenger miles flown in the first nine months of the year totaled 4,374,692,537, an increase of 81 per cent over the same period in 1945. The average available seats per mile rose in the same period from 19.59 to 24.09, reflecting the usage of the bigger aircraft as well as greater frequency of service. The average revenue passenger load, however, did not go up as rapidly, increasing from a 1945 figure of 17.39 to 19.96 in 1946. The difference between the two sets of figures illustrates again the drop in load factor.

Most of the larger operators put into operation large four-engine airplanes of either the DC-4 or Constellation type for the long transcontinental runs. These airplanes seat 48 passengers, and the Constellation, in particular, makes the transcontinental run in a dawn-to-dusk schedule. A few of the Boeing Strato-cruisers also made their debut in 1946. This plane accommodates 67 passengers in its upper deck and 14 in the lower deck lounge. Performance is such that Chicago is within 2 hours and 30 minutes of New York, and Los Angeles is only 8 hours and 10 minutes from the East Coast. The Martin 202 is scheduled to make its appearance early in 1947. It is primarily a short haul, 30-place airliner for feeder work. In short, the airlines are in the process of gradually replacing their rather old equipment with larger, faster, and more economical transport planes.

AIR MAIL

According to the Air Transport Association, air mail was off about 50 per cent in 1946 with a figure of 32,000,000 ton-miles, as war volume disappeared. However, a substantial increase in usage of air mail was evidenced in the last quarter with the advent of 5-cent air mail. Actual mail ton-miles flown in the first nine months added up to 24,554,020, compared with 50,541,985 in the same period in 1945. The average mail load dropped from 681.1 pounds to 218.4. Air mail on foreign extensions of our airlines, however, increased approximately 30 per cent, the estimated ton-miles being 6,000,000 for the year.

Air mail represented about 6 per cent of all operating revenue of the airlines in 1946, whereas it was 16.6 per cent in 1945. This indicates the decreasing importance volume-wise of air mail in the airline revenue picture. It is apparent now that the air mail growth of the last few years was owing largely to the exigencies of war. It is believed that the 5-cent air mail rate will be attractive enough to broaden the use of air mail on a considerable scale. However, two airlines have already requested higher mail pay, citing progressive increases in cost of labor, materials, equipment and fuel. It was their contention that the institution of the 5-cent rate only partially offset the post-war slump in air mail.

AIR EXPRESS AND CARGO

Air express and cargo carried by domestic carriers increased 57 per cent with the year's total ton-miles standing at 37,000,000. Foreign extensions added 24,000,000 ton-miles to this picture, representing 175 per cent increase over the 1945 operations. The exact figures for express and freight ton-miles for the first three quarters of 1946 and 1945 were 23,041,708 and 17,094,780 ton-miles, respectively, despite average express and freight loads of 202.7 pounds and 227.9 pounds for the same years. Air express flown by domestic carriers accounted for 3.5 per cent of all revenue.

During 1946, several independent non-scheduled cargo operators aggressively started to move into this field in a big way. Whereas express and cargo was only a very small part of the certificated operator's revenue, it became the one and only source of revenue for the newcomers. The net result was that one of the cargo non-scheduled operators carried as much as 2,000,000 ton-miles in 5½ months of operation. The year-end saw the development of considerable competition between the regular scheduled operators and the non-scheduled operators in the cargo field. The indications are that the purely cargo operators may be by far the most efficient, and it seems they are here to stay.

FARES, REVENUES, AND EXPENSES

Passenger fares remained at the 4½ cent per mile base established in 1945, although it is expected that premium fares will be used when the new airplanes, like the DC-6 and the Rainbow, are put in service. This will be very similar to the extra fare arrangements now used by the railroads on their crack schedules. Table II shows in summary form the operating revenue and expense statistics of the 20 domestic carriers for the first 8 months of the year. It will be noted that the total operating revenue for the period increased from $139,990,477 in 1945 to $200,802,799 in 1946, an increase of approximately $61,000,000. During the same period, however, the operating expenses increased $87,000,000, resulting in a decrease in net revenue of $26,000,000 for 1946. Ten of the 20 operators were in the red, some so much so that refinancing was their most acute problem.

Analyzing the breakdown of operating revenue, it is noted that 88.8 per cent of the total is derived from passenger transportation. Mail and express account for 6.5 per cent and 3.47 per cent, respectively, with the balance of 1.23 for miscellaneous. The same figures for the 1945 operations were, respectively, 76.2 per cent, 16.5 per cent, 5.6 per cent, and 1.6 per cent, indicating the sharp increase in the proportion of passenger revenue.

Reference to Table II will show that the total operating expense increased almost 80 per cent over the 1945 figure. Flying operations account for $45,309,194 of the total of $196,610,042 or 23.1 per cent. The next largest item of expense is $37,401,088 for ground operations, corresponding to 19 per cent. Traffic and sales, and flight equipment maintenance costs follow with $21,119,643 and $19,285,630, respectively. It is evident from detailed study of Table II that the profit position of 50 per cent of the airlines was somewhat precarious. In fact, two of the smaller operators were almost at the point of ceasing operations at the end of the year. The airlines face 1947 with the knowledge that operating expense must be reduced if they are to show a profit.

TABLE I. **DOMESTIC AIR CARRIERS** (Release of Mileage and Traffic Statistics for 9 Months ended Sept. 30, 1946 and Sept. 30, 1945[1]

			Mileage					
		Miles Scheduled	Scheduled Miles Flown		Other Revenue Miles	Total Revenue Miles	Non-Revenue Miles	Total Miles Flown
			Percentage	Number				
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
All American	1946	1,389,296	94.25	1,309,386	580	1,309,966	81,279	1,391,245
	1945	1,192,152	91.13	1,086,378	1,234	1,087,612	22,597	1,110,209
American	1946	45,109,357	97.48	43,974,325	1,555,193	45,529,518	3,121,565	48,651,083
	1945	33,396,106	95.31	31,828,341	1,143,973	32,972,314	1,516,162	34,488,476
Braniff	1946	8,259,577	98.86	8,165,098	270,467	8,435,565	532,683	8,968,248
	1945	5,916,121	96.40	5,703,078	103,548	5,806,626	475,365	6,281,991
Caribbean	1946	264,161	92.44	244,180	76,443	320,623	25,803	346,420
	1945	184,642	98.32	181,539	74,704	256,243	23,146	279,389
Chi-Sou	1946	6,194,084	96.27	5,963,336	74,827	6,038,163	333,962	6,372,125
	1945	3,755,904	95.41	3,583,321	18,879	3,602,200	103,475	3,705,675
Colonial	1946	2,432,221	91.91	2,235,496	207,758	2,443,254	293,691	2,736,945
	1945	1,168,133	92.53	1,080,872	117,516	1,198,388	31,824	1,230,212
Continental	1946	4,163,811	98.96	4,120,529	16,757	4,137,286	177,503	4,314,789
	1945	2,581,011	96.85	2,499,734	6,891	2,506,625	81,289	2,587,914
Delta	1946	8,139,710	97.33	7,922,724	24,452	7,947,176	469,267	8,416,443
	1945	4,320,359	96.60	4,173,266	7,198	4,180,464	117,820	4,298,284
Eastern	1946	Data not available due to carrier's delinquency in filing Form 2780 report for September 1946.						
	1945	19,288,853	96.26	18,568,226	140,936	18,709,162	511,212	19,220,374
Hawaiian	1946	962,213	98.38	946,601	451,390	1,397,991	64,765	1,462,756
	1945	452,212	99.90	451,742	410,352	862,094	24,501	886,595
Inland	1946	1,523,304	98.43	1,499,332	723	1,500,055	71,341	1,571,396
	1945	1,225,045	97.63	1,195,983	2,639	1,198,622	56,656	1,255,278
Mid-Continent	1946	3,840,705	98.01	3,764,437	15,718	3,780,155	102,702	3,882,857
	1945	2,293,042	96.64	2,215,978	1,736	2,217,714	98,044	2,315,758
National	1946	6,822,766	94.72	6,462,713	134,957	6,597,670	459,452	7,057,122
	1945	4,248,014	96.90	4,116,132	201,399	4,317,531	120,358	4,437,889
Northeast	1946	3,415,338	83.77	2,860,946	54,819	2,915,765	114,781	3,030,546
	1945	1,700,888	85.40	1,452,563	31,512	1,484,075	62,860	1,546,935
Northwest	1946	13,761,213	96.71	13,308,114	259,442	13,567,556	466,570	14,034,126
	1945	8,335,758	97.48	8,125,384	188,285	8,313,669	251,087	8,564,756
Penn-Central	1946	13,535,349	94.81	12,832,601	212,203	13,044,804	643,214	13,688,018
	1945	8,190,077	93.25	7,636,977	43,369	7,680,346	163,007	7,843,353
Pioneer	1946	804,620	90.40	727,386	857	728,243	83,840	812,083
	1945[2]	126,845	88.28	111,973	—	111,973	5,283	117,256
TWA	1946	32,955,888	96.56	31,821,450	1,753,346	33,574,796	2,146,537	35,721,333
	1945	23,541,741	92.62	21,803,430	602,808	22,406,238	1,286,679	23,692,917
United	1946	41,024,026	96.75	39,689,312	938,566	40,627,878	2,072,374	42,700,252
	1945	28,520,377	94.78	27,030,977	565,102	27,596,079	949,480	28,545,559
Western	1946	6,226,859	98.90	6,158,650	79,723	6,238,373	501,918	6,740,291
	1945	3,666,496	98.60	3,615,237	122,231	3,737,468	238,852	3,976,320
Total	1946[3]	228,010,101	96.53	220,099,030	8,111,694	228,210,724	12,770,811	240,981,535
	1945	154,103,776	95.04	146,461,131	3,784,312	150,245,443	6,139,697	156,385,140
8 Months to August 31, 1946:								
Eastern		24,447,141	97.54	23,845,780	1,757,133	25,602,913	957,503	26,560,416
Adjusted Total[4]		200,323,547	96.58	193,466,388	7,305,275	200,771,663	11,404,024	212,175,687

---

[1] Effective Jan. 1, 1946, all revenue traffic statistics are reported on the basis of direct airport-to-airport distances. For the purposes of comparability those traffic statistics reported prior to that date on the basis of course flown distances have been converted to reflect direct airport-to-airport distances.

[2] Commercial operations were inaugurated by Essair Aug. 1, 1945. Corporate name changed to Pioneer Air Lines, Inc., June 17, 1946.

[3] The total of all carriers for the 9 months ended Sept. 30, 1946, reflects data for Eastern for the 9 months ended Aug. 31, 1946, due to non-receipt of this carrier's Form 2,780 report for September 1946.

[4] Includes data for Eastern for the 8 months ended Aug. 31, 1946 in lieu of the data for the 8 months ended July 31, 1946 used in the August 1946 Public Release, because of the delinquent filing by this carrier of Form 2780 report for August 1946.

		Traffic									
		Total Passenger-Miles (8)	Revenue Passenger-Miles (9)	Revenue Passenger Load Factor (10)	Average Available Seats per Mile (11)	Average Revenue Passenger Load (12)	Mail Ton-Miles (13)	Average Mail Load (Pounds) (14)	Express and Freight Ton-Miles (15)	Average Express and Freight Load (Pounds) (16)	Excess Baggage Ton-Miles (17)
All American	1946	—	—	—	—	—	25,932	39.6	8,518	13.0	—
	1945	—	—	—	—	—	51,932	95.5	9,141	16.8	—
American	1946	933,683,899	918,496,081	85.56	24.42	20.90	4,994,430	225.5	6,441,906	285.0	991,232
	1945	549,446,238	544,318,441	90.23	19.37	17.48	10,662,519	663.6	5,191,545	316.2	1,049,960
Braniff	1946	159,264,287	157,318,986	82.44	22.88	18.86	499,339	119.2	508,369	121.4	136,456
	1945	104,654,847	103,664,717	89.60	19.93	17.86	767,006	264.2	386,073	133.0	159,514
Caribbean	1946	2,339,078	2,194,962	46.97	19.12	8.98	1,870	17.4	4,690	38.4	1,926
	1945	1,478,829	1,401,905	53.70	12.98	6.97	1,682	38.5	8,845	86.7	3,558
Chi-Sou	1946	108,984,001	104,891,744	73.92	23.56	17.42	260,962	86.7	321,722	106.8	89,840
	1945	60,365,616	58,705,046	78.64	20.81	16.37	372,295	206.7	276,191	153.3	77,070
Colonial	1946	35,612,414	35,237,856	74.67	20.14	15.04	68,914	62.1	40,539	34.6	35,733
	1945	20,202,807	20,050,072	79.82	20.96	16.73	46,719	92.9	24,835	41.4	33,404
Continental	1946	60,956,330	59,158,757	68.76	20.83	14.32	115,234	55.8	83,776	40.6	45,156
	1945	34,092,017	33,091,296	79.99	16.50	13.20	133,070	106.2	73,082	58.3	31,235
Delta	1946	155,674,485	152,377,060	74.85	25.64	19.19	566,770	142.7	385,880	97.2	182,352
	1945	75,070,203	74,131,652	85.34	20.79	17.75	1,083,577	518.8	184,092	88.1	156,563
Eastern	1946	Data not available due to carrier's delinquency in filing Form 2780 report for September 1946.									
	1945	319,648,166	317,153,782	87.31	20.45	17.85	4,404,393	470.8	1,840,237	196.7	432,902
Hawaiian	1946	26,125,238	25,977,434	88.01	23.64	20.81	19,672	114.0	326,816	468.4	73,839
	1945	16,349,743	16,290,322	94.14	24.00	22.59	18,032	111.9	364,630	847.4	72,874
Inland	1946	17,652,943	17,207,883	64.31	18.25	11.74	37,825	50.4	15,192	20.3	11,531
	1945	12,988,441	12,775,210	72.41	15.23	11.03	46,708	77.9	8,629	14.4	32,577
Mid-Continent	1946	57,637,467	56,185,905	75.66	19.68	14.89	155,126	82.2	92,081	48.8	36,822
	1945	28,863,518	28,029,622	73.83	17.12	12.64	209,154	188.6	44,114	39.8	21,557
National	1946	126,875,111	122,993,830	80.76	23.09	18.64	481,541	146.0	171,553	52.0	334,604
	1945	52,967,759	52,331,858	90.07	13.47	12.13	537,867	249.3	101,296	47.0	115,272
Northeast	1946	63,163,684	61,538,363	71.35	29.60	21.12	51,273	36.4	58,108	39.9	15,686
	1945	25,364,529	24,661,254	73.08	22.74	16.62	51,684	69.7	27,996	37.7	12,113
Northwest	1946	287,300,008	283,503,823	86.88	24.09	20.92	1,368,235	203.1	771,762	113.9	198,785
	1945	147,397,499	146,206,913	88.48	19.92	17.63	2,058,597	498.6	637,466	153.4	145,439
Penn-Central	1946	287,728,460	284,027,909	74.59	29.33	21.88	464,090	71.5	890,745	137.2	128,183
	1945	130,503,195	129,376,812	81.72	20.61	16.85	682,523	177.7	662,991	172.6	79,970
Pioneer	1946	4,341,504	4,058,545	48.16	11.57	5.57	15,220	41.8	4,357	12.0	2,251
	1945[2]	375,923	351,630	49.07	8.99	4.41	4,182	74.7	261	4.7	231
TWA	1946	645,751,574	622,901,317	86.56	22.84	19.77	5,403,029	322.5	4,490,826	268.1	742,358
	1945	371,411,188	363,726,591	90.61	20.34	18.43	12,338,792	1,101.7	3,405,559	304.1	410,549
United	1946	807,341,860	800,412,256	86.90	24.39	21.19	7,161,426	354.1	5,804,382	286.6	543,471
	1945	425,060,915	418,029,694	95.64	19.10	18.27	16,247,807	1,178.2	3,622,369	262.7	663,435
Western	1946	142,695,717	140,793,573	78.65	28.79	22.64	434,628	141.0	361,256	116.2	97,360
	1945	67,722,155	66,962,715	87.88	20.39	17.92	823,446	440.6	225,428	120.6	68,156
Total	1946[3]	4,457,674,491	4,374,692,537	82.87	24.09	19.96	24,554,020	218.4	23,041,708	202.7	4,468,959
	1945	2,443,963,588	2,411,259,532	88.76	19.59	17.39	50,541,985	681.1	17,094,780	227.9	3,566,379
8 Months to August 31, 1946:											
Eastern		492,387,340	483,663,130	83.85	23.06	19.33	2,111,588	165.1	2,027,424	158.5	740,296
Adjusted Total[4]		3,872,250,401	3,801,487,703	83.10	23.74	19.73	22,389,770	226.1	19,437,635	194.3	3,902,448

TABLE II. DOMESTIC AIR CARRIERS

Release of Operating Revenue and Expense Statistics for 8 Months Ended August 31, 1946 and August 31, 1945

		Operating Revenues					Operating Expenses			
		Passenger	Mail	Express and Freight	All Other	Total	Flying Operations	Flight Equipment Maintenance —Direct	Depreciation Flight Equipment	Ground Operations
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
All American	1946	$ —	$ 474,685	$ 3,592	$ 14,012	$ 492,289	$ 144,674	$ 104,413	$ 29,875	$ 116,445
	1945	—	414,936	5,621	3,185	423,742	124,699	86,822	39,103	105,227
American	1946	35,998,959	2,026,123	1,960,915	910,866	40,896,863	8,567,247	4,201,447	2,277,832	7,689,643
	1945	23,965,338	4,297,693	2,442,902	627,061	31,332,994	5,985,481	2,245,889	,786,584	4,252,663
Braniff	1946	6,057,270	272,274	152,194	138,439	6,620,177	1,502,071	807,450	410,790	1,300,513
	1945	4,331,968	409,943	167,616	101,981	5,011,508	1,033,022	401,258	237,450	787,999
Caribbean Atl.	1946	202,059	10,410	7,509	42,639	262,617	95,433	37,887	11,554	63,660
	1945	136,676	10,311	12,679	19,381	179,047	52,451	17,252	922	29,156
Chi-Sou	1946	4,396,928	139,762	105,519	44,604	4,686,813	1,169,739	559,348	454,454	932,645
	1945	2,621,117	203,022	121,857	46,608	2,992,604	616,107	243,859	135,863	505,787
Colonial	1946	1,761,471	89,555	14,133	106,157	1,971,316	531,881	210,723	195,061	433,105
	1945	969,300	91,069	11,300	24,685	1,096,354	241,810	118,471	66,454	175,026
Continental	1946	2,528,212	410,666	23,568	31,189	2,993,635	709,032	274,950	231,890	574,972
	1945	1,497,080	437,350	32,506	21,700	1,988,636	450,902	205,154	95,088	370,287
Delta	1946	6,069,352	310,776	98,698	79,875	6,558,701	1,503,594	705,149	439,416	1,346,895
	1945	3,219,821	567,360	76,995	80,031	3,944,207	691,155	234,977	196,406	585,701
Eastern	1946	23,043,453	941,944	813,607	423,103	25,222,107	5,337,850	2,180,475	820,453	3,699,764
	1945	14,615,982	1,785,070	836,461	257,278	17,494,791	3,038,380	1,089,882	402,765	2,313,670
Hawaiian	1946	1,617,805	7,296	192,776	102,579	1,920,456	262,937	224,014	125,383	316,437
	1945	1,145,965	6,963	227,243	99,839	1,480,010	199,787	161,791	78,054	166,099
Inland	1946	732,438	398,108	4,266	16,002	1,150,814	303,728	142,802	70,254	309,308
	1945	593,089	400,933	3,613	80,281	1,077,916	339,939	113,496	68,399	230,186
Mid-Continent	1946	2,467,572	634,050	34,862	37,238	3,173,722	668,277	336,988	238,810	529,004
	1945	1,192,954	626,481	20,876	13,376	1,853,687	412,492	208,981	171,986	328,005
National	1946	5,205,329	277,933	61,579	192,083	5,736,924	1,205,339	645,097	448,589	846,080
	1945	2,320,657	289,694	42,499	57,967	2,710,817	605,836	272,259	146,993	439,830
Northeast	1946	2,674,116	316,462	27,033	10,400	3,028,011	581,603	460,763	325,188	587,942
	1945	1,106,947	259,055	15,206	10,537	1,391,745	276,669	198,812	73,375	282,797
Northwest	1946	11,165,478	737,846	247,951	149,033	12,300,308	2,607,588	973,387	1,092,385	2,044,465
	1945	6,181,306	1,093,606	293,122	78,635	7,646,669	1,490,800	585,089	319,675	1,236,136
Penn-Central	1946	11,006,470	258,105	275,417	125,527	11,665,519	2,790,550	1,278,114	1,025,023	2,606,311
	1945	6,474,000	346,639	307,334	56,291	7,184,264	1,340,096	522,461	346,074	1,231,475
Pioneer	1946	160,900	151,647	1,521	1,860	315,928	104,232	81,383	28,552	123,702
	1945[1]	2,084	10,376	—	14	12,474	8,619	5,457	3,011	9,101
T.W.A. (Domestic Service)	1946	25,779,528	2,261,703	1,302,004	422,201	29,765,436	8,104,471	2,876,423	2,058,016	6,493,113
	1945	15,884,703	4,903,273	1,528,305	357,603	22,673,884	4,180,157	1,364,215	1,008,981	3,718,245
United	1946	31,060,515	2,970,867	1,514,608	313,395	35,859,385	7,828,146	2,234,744	2,751,170	6,189,018
	1945	17,399,126	6,449,122	1,596,350	332,110	25,776,708	4,827,829	1,194,835	1,063,300	3,705,603
Western Air	1946	5,725,558	228,316	104,058	123,846	6,181,778	1,290,802	950,073	662,628	1,198,066
	1945	2,975,704	444,198	100,201	198,317	3,718,420	703,831	392,531	236,556	580,633
Total	1946	177,653,413	12,918,528	6,945,810	3,285,048	200,802,799	45,309,194	19,285,630	13,697,323	37,401,088
	1945	106,633,817	23,047,094	7,842,686	2,466,880	139,990,477	26,620,062	9,663,491	5,477,039	21,053,626

---

[1] Commercial operations were inaugurated by Essair August 1, 1945. Corporate name changed to Pioneer Air Lines, Inc., June 17, 1946.

Source: Carriers' Monthly Form 2780 reports.

Subject to correction.

		Operating Expenses (Continued)								Net Revenue from Operations
		Ground Equipment Maintenance —Direct	Equipment Maintenance —Indirect	Depreciation Ground Equipment	Passenger Service	Traffic and Sales	Advertising and Publicity	General and Administrative	Total	
		(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
All American	1946	$ 9,795	$ 69,659	$ 10,098	$ —	$ 6,548	$6,214	$ 55,842	$ 553,563	$ −61,274
	1945	6,766	67,788	9,500	—	4,474	3,831	36,789	484,999	−61,257
American	1946	488,907	3,666,071	532,130	3,307,583	4,584,598	1,307,014	3,561,180	40,183,652	713,211
	1945	288,577	1,901,539	333,768	2,071,268	2,639,179	982,134	2,558,467	24,045,549	7,287,445
Braniff	1946	80,195	412,047	69,146	586,932	833,475	132,112	581,496	6,716,227	−96,050
	1945	103,002	267,452	59,188	362,173	401,434	155,327	459,592	4,267,897	743,611
Caribbean Atl.	1946	4,650	15,540	4,288	20,202	37,165	3,015	41,082	334,476	−71,859
	1945	3,276	20,218	3,336	8,905	20,861	3,509	25,936	185,822	−6,775
Chi-Sou	1946	77,754	307,102	49,482	461,876	693,964	184,151	584,750	5,475,265	−788,452
	1945	39,552	156,786	29,706	215,679	313,139	75,211	329,813	2,661,502	331,102
Colonial	1946	23,822	224,542	17,215	106,266	226,022	68,283	225,605	2,262,525	−291,209
	1945	10,537	84,360	10,963	47,080	79,566	18,535	105,458	958,260	138,094
Continental	1946	37,342	226,905	47,653	233,492	195,676	82,770	339,891	2,954,573	39,062
	1945	28,362	131,684	34,883	137,219	96,075	59,413	200,974	1,810,041	178,595
Delta	1946	57,461	384,287	49,056	499,764	678,087	229,373	446,740	6,339,822	218,879
	1945	22,062	131,027	30,742	237,355	256,578	94,787	298,866	2,779,656	1,164,551
Eastern	1946	270,736	1,169,007	125,145	1,767,699	2,589,609	586,728	1,208,912	19,756,378	5,465,729
	1945	115,340	609,152	85,638	1,065,222	1,161,219	493,536	704,325	11,079,129	6,415,662
Hawaiian	1946	32,506	99,677	39,547	44,640	78,219	13,934	205,401	1,442,695	477,761
	1945	23,393	60,999	31,756	28,072	61,262	14,495	133,327	959,035	520,975
Inland	1946	11,472	47,962	10,657	73,088	58,501	36,893	75,270	1,139,935	10,879
	1945	11,201	41,441	8,126	52,778	45,068	22,438	59,327	992,399	85,517
Mid-Continent	1946	28,751	172,437	28,327	211,960	297,372	74,368	229,354	2,815,648	358,074
	1945	32,705	111,590	20,823	114,801	95,591	59,263	166,307	1,722,544	131,143
National	1946	83,001	361,258	59,101	392,387	517,124	96,671	357,542	5,012,189	724,735
	1945	27,793	115,316	33,723	152,526	271,571	49,390	216,592	2,331,829	378,988
Northeast	1946	59,256	272,080	42,307	153,320	325,777	57,934	263,431	3,129,601	−101,590
	1945	28,257	116,725	22,075	84,422	135,355	85,588	154,586	1,458,661	−66,916
Northwest	1946	114,933	1,049,485	158,062	961,426	1,124,090	272,174	1,050,680	11,448,675	851,633
	1945	131,710	943,937	133,086	567,170	608,493	142,987	856,583	7,015,666	631,003
Penn-Central	1946	163,897	825,835	128,411	1,034,120	1,632,103	393,556	1,179,045	13,056,965	−1,391,446
	1945	78,491	347,199	75,553	517,039	642,759	192,672	647,369	5,941,188	1,243,076
Pioneer	1946	7,149	26,719	4,275	9,466	22,931	7,771	51,986	468,166	−152,238
	1945[1]	450	1,724	766	236	735	1,315	4,926	36,340	−23,866
T.W.A. (Domestic Service)	1946	364,370	2,575,349	316,587	3,005,395	3,359,554	913,820	3,638,539	33,705,637	−3,940,201
	1945	149,820	1,216,627	196,671	1,797,034	1,725,597	705,361	2,635,487	18,698,195	3,975,689
United	1946	410,598	1,944,641	450,978	3,386,435	3,205,530	995,301	3,752,788	33,149,349	2,710,036
	1945	311,537	800,182	311,778	1,793,036	1,716,106	792,410	2,531,973	19,048,589	6,728,119
Western Air	1946	83,888	372,315	55,500	569,677	653,298	284,398	544,056	6,664,701	−482,923
	1945	41,487	204,177	35,399	275,202	302,434	112,193	319,007	3,203,450	514,970
Total	1946	2,410,483	14,222,918	2,197,965	16,825,728	21,119,643	5,746,480	18,393,590	196,610,042	4,192,757
	1945	1,454,318	7,329,923	1,467,480	9,527,217	10,577,496	4,064,395	12,445,704	109,680,751	30,309,726

AIRPORTS AND AIRWAYS

On Jan. 1, 1946, there were 1,509 commercial fields, 1,220 municipal airports, 216 C.A.A. intermediate, and 1,081 Army, Navy, or miscellaneous fields. More than 1,000 of these airports were equipped for night flying operations.

The Federal-Aid Airport Act was passed in 1946 and under it the Civil Aeronautics Authority has available $33,000,000 for spending on airports in the continental United States in the fiscal year ending June 30, 1947. The first annual National Airport Plan submitted to Congress under this act tendered aid only to Class I, II, and III airports, *i.e.* fields suitable only for private flying, charter, or feeder line operations. A Class I field has runways 1,800 to 2,700 feet long; Class II—with runways 2,700 to 3,700 feet long; and Class III—with runways 3,700 to 4,700 feet long. Approximately 800 airports will be involved in this program. A total of 385 new airports will be constructed, 412 will be improved, and three new seaplane bases will also be constructed.

Considerable difficulty was experienced during the year with questions relating to state *versus* municipal control of the funds available for the airport program. Several airports were equipped with I.L.S. or G.C.A. blind landing systems for bringing in aircraft under conditions of no visibility. Towards the end of the year the latter system was instrumental in landing several aircraft under conditions which would have normally been considered impossible. The spectacular nature of these cases which might have been major crashes resulted in acceleration of the demand for more of such installations.

AIRCRAFT MANUFACTURE

Approximately 34,500 personal aircraft were constructed by 14 manufacturers in 1946, an all-time record. Piper Aircraft led the field with a total of 7,780 aircraft produced in 1946. Aeronca followed very closely with 7,555, and Cessna third with 3,959. Fourth, fifth, and sixth places went to Taylorcraft, Erco, and Luscombe with 3,151, 2,503 and 2,490, respectively. All of the above airplanes were of the two-place type with power ranging from 65 to 100 horsepower. Seventh place went to Stinson with 1,456 four-place airplanes. Production towards the end of the year showed a sharp drop in the two-place airplanes. In fact, there were more three- and four-place airplanes on order in December than there were for the two-place type. However, there was some indication in December that the market saturation point was slowly being approached.

In addition to the personal airplanes, there were approximately 600 transports and 1,400 military aircraft produced. The entire industry employed about 150,000 persons at the end of the year. Most production schedules were cut back, and it is expected that 1947 will not see as many airplanes produced as the record year 1946.

SONIC RESEARCH

The most spectacular, as well as significant, development of the year in research was the first powered flight of the XS-1, a rocket powered airplane designed to penetrate the compressibility barrier in the region of speeds of sound. Designed for a supersonic speed of 1,700 miles per hour, this airplane is a flight test article for the investigation of those regions beyond the speed of sound. Powered with four 1,500-pound thrust rocket engines, the plane was launched from a B-29 and attained a speed of 550 miles per hour for a short space of time. The airplane will be used for the systematic determination of turbulence phenomena in the transonic range preparatory to the attempt to reach maximum speeds. It has been found that a special windshield will be necessary since air friction at the speeds already flown would raise the temperature close to the melting point of glass. The final attempt to break through the sonic barrier may be made by remote control of the XS-1 with photographic observation of the actual trials.

GUIDED MISSILES

Practically most of the research activity was directed at problems related to transonic and supersonic speeds of aircraft. Also at the head of the list were those problems related to guided missiles. This included developments in rocket engines, jet, and ramjet powerplants. Missiles with ranges of 8,000 miles are not too far distant, according to latest indications.

GROUND CONTROLLED APPROACH

The Collier Trophy awarded annually for the outstanding performance in aviation went to Dr. Luis W. Alvarez for his development of G.C.A. (Ground Controlled Approach), a system for landing aircraft under conditions of no visibility. The system has been in use by the Army and Navy under a cloak of secrecy for some time. Numerous landings have demonstrated its capabilities. In this system, the progress of an airplane is followed on a radarscope on the ground, which locates the airplane both in elevation and azimuth. The plane is picked up at a distance of 30 miles by a search beam and guided in by verbal instruction from the scope operator into a 10-mile precision range. On this viewer is indicated both the glide path and the relation of the airplane to the centerline of the runway. Proven by numerous landings, the system has already been adopted by one of the major air transport operators as an additional safety factor.

OTHER RESEARCH

Research is also being conducted along the lines of a completely automatic landing procedure, relieving the pilot of the responsibility almost entirely.

The search for light, yet strong, materials continued with considerable emphasis on the low density core sandwich type of construction. One of the newest high speed fighters was constructed almost entirely of this type of construction. The need for wrinkle-free construction in the new high speed aircraft mitigates against the usual thin skin type construction. The low density metal faced sandwich type of materials developed offers considerable promise.

The remote control of aircraft by radar was demonstrated in the Bikini Crossroads Project. An automatic ground tracking device has been developed which automatically follows and records the position of any aircraft in flight. The same arrangement was also used to direct the plane, even though it was not even in sight. It is expected that many applications of radar will continue to be the order of the day for many years to come.

PERIODICAL PUBLICATIONS

Aviation
330 West 42nd Street, New York City.
Bus Transportation
330 West 42nd Street, New York City.
Electrical Communication
67 Broad Street, New York City.
Electrical World
330 West 42nd Street, New York City.
Journal of the Aeronautical Sciences
30 Rockefeller Plaza, New York City.
Manufacturers' News
120 South La Salle Street, Chicago.
Manufacturers Record
Candler Bldg., Baltimore, Md.
Marine Age
75 West Street, New York City.
Marine Engineering & Shipping Review
30 Church Street, New York City.
Marine Journal
5 Beekman Street, New York City.
Marine News
26 Water Street, New York City.
Marine Progress
95 Broad Street, New York City.

Mass Transportation
431 South Dearborn Street, Chicago.

National Aeronautics
Willard Hotel, Chicago.

Protectionist
38 Chauncy Street, Boston.

Railway Age
30 Church Street, New York City.

S.A.E. (Journal of the Society of Automotive Engineers)
29 West 39th Street, New York City.

Shipping Digest
16 Bridge Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

MANUFACTURERS

American Assn. of Creamery Butter Manufacturers, 110 N. Franklin St., Chicago, Ill.

American Automobile Assn., Pennsylvania Ave. at 17th St., Washington, D. C.

American Bottlers of Carbonated Beverages, 1128 Sixteenth St., Washington, D. C.

American Brush Manufacturers Assn., 505 Arch St., Philadelphia.

American Hardware Manufacturers Assn., 342 Madison Ave., New York City.

American Institute of Steel Construction, Inc., 101 Park Ave., New York City.

American Iron and Steel Institute, 350 Fifth Ave., New York City.

American Paper and Pulp Assn., 122 E. 42nd St., New York City.

American Petroleum Institute, 50 W. 50th St., New York City.

American Zinc Institute, 60 E. 42nd St., New York City.

Automobile Manufacturers Assn., 366 Madison Ave., New York City.

Mellon Institute of Industrial Research, 4400 Fifth Ave., Pittsburgh, Pa.

National American Wholesale Lumber Assn., 41 E. 42nd St., New York City.

National Assn. of Cotton Manufacturers, 80 Federal St., Boston.

National Assn. of Ice Industries, 1706 L St., N.W., Washington, D. C.

National Assn. of Manufacturers, 14 W. 49th St., New York City.

National Assn. of Wool Manufacturers, 80 Federal St., Boston.

National Electrical Contractors Assn., 420 Lexington Ave., New York City.

National Electrical Manufacturers Assn., 155 E. 44th St., New York City.

National Federation of Textiles Inc., 389 Fifth Ave., New York City.

National Lumber Manufacturers Assn., 1337 Connecticut Ave., Washington, D. C.

National Machine Tool Builders Assn., 10525 Carnegie, Cleveland, O.

National Metal Trades Assn., 60 E. 42nd St., New York City.

Rubber Manufacturers Assn., 444 Madison Ave., New York City.

United States Brewers Assn., 21 E. 40th St., New York City.

United Typothetae of America, Tower Building, 719 Fifteenth St., N.W., Washington, D. C.

TRANSPORTATION AND COMMUNICATION

Aerial League of America, 570 Lexington Ave., New York City.

American Assn. of Railroad Superintendents, 111 Union Station, St. Louis, Mo.

American Railway Engineering Assn., 59 E. Van Buren St., Chicago, Ill.

American Road Buildings Assn., 1319 F Street, N.W., Washington, D. C.

American Steamship Owners Mutual Protection and Indemnity Assn., Inc., 25 Broad St., New York City.

AMERICAN TRANSIT ASSN., 292 Madison Ave., New York City.

ASSOCIATED TRAFFIC CLUBS OF AMERICA, 105 W. Adams St., Chicago, Ill.

ASSOCIATION OF AMERICAN RAILROADS, Transportation Building, 17th and H Streets, Washington, D. C.

CRUFT LABORATORY, Harvard University, Cambridge, Mass.

INTERNATIONAL AMATEUR RADIO UNION, 38 La Salle Rd., West Hartford, Conn.

MARITIME ASSN. OF THE PORT OF NEW YORK, 80 Broad St., New York City.

NATIONAL AERONAUTIC ASSN., 1025 Connecticut Ave., Washington, D. C.

NATIONAL COUNCIL OF AMERICAN IMPORTERS, INC., 45 E. 17th St., New York City.

NATIONAL HIGHWAYS ASSN., Bass River, Cape Cod, Mass.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE, 1 La Salle Street Bldg., Chicago, Ill.

NATIONAL TRAFFIC SERVICE ASSN., 204 Franklin St., New York City.

NORTH AMERICAN EXPORT GRAIN ASSN., INC., 2 Broadway, New York City.

RAILROAD OWNERS ASSN., 502 Chandler Bldg., Washington, D. C.

RAILWAY BUSINESS ASSN., 38 S. Dearborn St., Chicago, Ill.

UNITED STATES BUREAU OF STANDARDS, Washington, D. C.

UNITED STATES NAVAL RESEARCH LABORATORY, Washington, D. C.

PART FIVE

SOCIAL AIMS AND CONDITIONS

DIVISION XIV

POPULATION AND MIGRATION

POPULATION STATISTICS

By Leon E. Truesdell
Chief, Population Division, U. S. Bureau of the Census

POPULATION GROWTH

The population of the United States on July 1, 1946, including persons in military service abroad, was estimated at 141,205,806. This figure represents an increase of 1,584,375, or 1.13 per cent, over the estimate for July 1, 1945. This increase is about the same as the increase in the two preceding fiscal years, and materially less than the increase of 1.36 per cent in 1943, which was the largest recorded for any recent year. These estimates are presented for July 1 of each year, from 1940 to 1946, in Table 1, together with estimates for each month of 1945. The estimates of population for dates subsequent to the 1940 Census are based on statistics of births, deaths, and net immigration, which are also presented in Table 1. The data for births and deaths have been adjusted for under-registration, and the figures for deaths include both combat and non-combat deaths of service men overseas. The immigration figures represent net arrivals in continental United States, including arrivals from territories and possessions, which amounted to about 40,000, mainly from Puerto Rico, in the year ended July 1, 1946.

The population estimated for July 1, 1946 represents an increase of 9,536,531, or 7.24 per cent over the 1940 census figure. The increase in slightly more than six years since 1940 thus exceeds by more than 500,000 the entire increase of 8,894,229 between the censuses of 1930 and 1940.

The chief source of the accelerated rate of population increase has been the wartime rise in the birth rate. Though the birth rate declined somewhat between 1943 and the early part of 1946, the level is still considerably higher than at any time between 1930 and 1940, and it bids fair, as indicated later, to reach a level in 1946 and 1947 even higher than that of the high point in 1943. The total increase in population between April 1, 1940, and July 1, 1946, is made up primarily of the excess of births over deaths, which amounted to 8,750,751, though net immigration contributed 785,780, including figures approaching 200,000 in each of the last two fiscal years included in the period. Immigration is thus becoming more important as a source of population growth as compared even with the earlier years of the post-censal period, and in particular as compared with the decade 1930-40, during which total immigration was exceeded by total emigration.

The figures representing net civilian immigration, as shown in Table 1, result from computations involving arrivals and departures of citizens as

TABLE 1

ESTIMATED POPULATION OF CONTINENTAL UNITED STATES INCLUDING ARMED FORCES OVERSEAS: 1940 TO 1946, WITH MONTHLY FIGURES FOR 1945

Date	Estimated Population	Increase Since Preceding Date		Changes in Preceding Period			
		Number	Per Cent	Births[1]	Deaths[1]	Excess of Births Over Deaths	Net Civilian Immigration
Annual:							
July 1, 1946[2]	141,205,806	1,584,375	1.13	2,895,144	1,502,440	1,392,704	191,671
July 1, 1945	139,621,431	1,537,982	1.11	2,970,284	1,631,215	1,339,069	198,913
July 1, 1944	138,083,449	1,586,400	1.16	3,016,562	1,556,377	1,460,185	126,215
July 1, 1943	136,497,049	1,832,125	1.36	3,209,177	1,487,068	1,722,109	110,016
July 1, 1942	134,664,924	1,462,051	1.10	2,808,000	1,415,194	1,392,806	69,245
July 1, 1941	133,202,873	1,232,649	0.93	2,628,113	1,454,088	1,174,025	58,624
July 1, 1940	131,970,224	300,949	0.23	623,065	353,212	269,853	31,096
April 1, 1940 (Census)	131,669,275	—	—	—	—	—	—
Monthly:							
Jan. 1, 1946	140,386,509	87,164	0.06	233,470	149,026	84,444	2,720
Dec. 1, 1945	140,299,345	106,202	0.08	228,053	121,294	106,759	−557
Nov. 1, 1945	140,193,143	129,871	0.09	244,556	122,425	122,131	7,740
Oct. 1, 1945	140,063,272	142,129	0.10	246,484	114,154	132,330	9,799
Sept. 1, 1945	139,921,143	148,372	0.11	256,130	118,617	137,513	10,859
Aug. 1, 1945	139,772,771	151,340	0.11	261,156	125,220	135,936	15,404
July 1, 1945	139,621,431	129,606	0.09	234,891	125,870	109,021	20,585
June 1, 1945	139,491,825	122,180	0.09	237,324	140,263	97,061	25,119
May 1, 1945	139,369,645	115,542	0.08	232,871	139,358	93,513	22,029
April 1, 1945	139,254,103	111,795	0.08	247,747	149,804	97,943	13,852
Mar. 1, 1945	139,142,308	111,951	0.08	234,192	135,551	98,641	13,310
Feb. 1, 1945	139,030,357	107,723	0.08	250,252	154,342	95,910	11,813
Jan. 1, 1945	138,922,634	111,869	0.08	248,612	148,706	99,906	11,963

---

[1] Estimated total, including adjustment for under-registration.

[2] Preliminary figures.

well as aliens. The data may be considered in three groups: (1) Alien immigrants and emigrants; (2) alien non-immigrants and non-emigrants, the latter comprising mainly government officials, temporary visitors, and persons in transit; and (3) citizens of the United States. The first group is the smallest both in gross movement and in net resultant. Figures for the whole period from April 1, 1940 to July 1, 1946, are as follows:

Arrivals	2,368,750
Immigrant aliens	295,579
Non-immigrant aliens	755,576
Citizens of the United States	1,317,595
Departures	1,582,970
Emigrant aliens	62,045
Non-emigrant aliens	552,954
Citizens of the United States	967,971
Excess of arrivals over departures (net immigration)	785,780
Immigrant aliens	233,534
Non-immigrant aliens	202,622
Citizens of the United States	349,624

Estimates of the civilian population, that is, the population excluding persons in the armed forces, for July 1 of each year from 1940 to 1946 are presented in Table 2, with the increase from one year to the next, together with figures representing the number of persons in the armed forces. The figures in this table show the effect of the military induction program on the civilian population, that is, the population from which had to be drawn workers for the defense and war production programs. The net decreases in the civilian population represents the excess of inductions over natural increase plus immigration. The military forces reached their maximum around midyear 1945, and during the year preceding this date their growth had been slowed down enough so that the civilian population showed a considerable increase during the year ended July 1, 1945. Subsequent to this date which falls in the period between V-E Day and V-J Day, the process of demobilization was very rapid. Mainly through the absorption of ex-service men, the civilian population increased between July 1, 1945 and July 1, 1946 by 10,845,685, in sharp contrast with the record for the year ended July 1, 1943, during which the civilian population decreased nearly 3,500,000 by reason of the rapid inductions which took place during that year. Between July and December. 1946, the number of persons still in the armed forces decreased from nearly 3,000,000 to somewhat less than 2,000,000.

All of the estimates in Tables 1 and 2 are presented to the last digit, as computed, instead of being rounded, not because they are assumed to be accurate to the last unit, but for convenience in summation.

BIRTH AND DEATH RATES

As already indicated, the recent rise in the birth rate has been the principal factor in the acceleration of the rate of population growth. During the calendar year 1945 there were 2,907,126 births, including an adjustment for under-registration. This number is materially smaller than the maximum of 3,158,593 recorded for 1943, and somewhat smaller than the figure for 1944, though it is still decidedly higher than the average of about 2,400,000 which prevailed during the decade of the 1930's. The rate prevailing in 1945 was approximately maintained during the first half of 1946, according to preliminary monthly totals, but these monthly figures indicate a rapid increase beginning with July, 1946, with rates for registered births in October and November representing annual rates well in excess of 28, or more than 50 per cent higher than the rate prevailing in the first half of the year, or in the year 1945. This increase in the number of births followed somewhat similar increases in the number of marriages recorded about a year earlier; and the statistics on marriages (see discussion below) indicate that high birth rates are likely to be continued at least through the year 1947.

While the birth rate in recent years has been relatively high, the death rate has shown little increase over the average for the preceding ten years. Even military mortality, which amounted in total to around 300,000, was not sufficient to raise the number of deaths in any one year by above 150,000.

The most significant data on births and deaths which are necessary in any study of trends in population growth are presented in Table 3, which gives for each year from 1920 to 1945 the number of registered births and deaths as reported by the National Office of Vital Statistics of the Public Health Service, the annual

TABLE 2

TOTAL AND CIVILIAN POPULATION OF THE UNITED STATES AND NUMBER OF PERSONS IN ARMED FORCES: 1940 TO 1946

Date	Total Population Including Armed Forces Overseas	Civilian Population			Persons in Armed Forces
		Total	Increase (+) or Decrease (−) Since Preceding Date		
			Number	Per Cent	
July 1, 1946	141,205,806	138,254,982	+10,845,685	+8.5	2,950,824
July 1, 1945	139,621,431	127,409,297	+873,123	+0.7	12,212,134
July 1, 1944	138,083,449	126,536,174	−874,183	−0.7	11,547,275
July 1, 1943	136,497,049	127,410,357	−3,464,553	−2.6	9,086,692
July 1, 1942	134,664,924	130,874,910	−682,820	−0.5	3,790,014
July 1, 1941	133,202,873	131,557,730	−101.556	−0.1	1,645,143
July 1, 1940	131,970,224	131,659,286	—	—	310,938

TABLE 3

BIRTHS AND DEATHS IN THE UNITED STATES: 1920 TO 1945

(Registrations for years prior to 1933 are for the current registration area. The birth registration states in 1920 included 59.7 per cent of the total population of the country and the death registration states 80.9 per cent, these areas gradually expanding until complete coverage was attained in 1933.)

Year	Births Registered		Deaths Registered		Estimated Totals, Including Adjustment for Under-registration		
	Number of Births	Rate Per 1,000 Pop.	Number of Deaths	Rate Per 1,000 Pop.	Births	Deaths	Excess of Births Over Deaths
1945	2,735,456	19.6	1,401,719	10.6	2,907,126	1,595,924	1,311,202
1944	2,794,800	20.2	1,411,338	10.6	2,969,186	1,580,478	1,388,708
1943	2,934,860	21.5	1,459,544	10.9	3,158,593	1,547,940	1,610,653
1942	2,808,996	20.9	1,385,187	10.4	3,038,434	1,434,277	1,604,157
1941	2,513,427	18.9	1,397,642	10.5	2,717,218	1,443,088	1,274,130
1940	2,360,399	17.9	1,417,269	10.7	2,558,499	1,474,213	1,084,286
1939	2,265,588	17.3	1,387,897	10.6	2,457,254	1,444,222	1,013,032
1938	2,286,962	17.6	1,381,391	10.6	2,483,129	1,438,200	1,044,929
1937	2,203,337	17.1	1,450,427	11.3	2,394,932	1,510,861	884,071
1936	2,144,790	16.7	1,479,228	11.6	2,333,830	1,541,665	792,165
1935	2,155,105	16.9	1,392,752	10.9	2,347,609	1,452,296	895,313
1934	2,167,636	17.2	1,396,903	11.1	2,366,415	1,458,145	908,270
1933	2,081,232	16.6	1,342,106	10.7	2,274,570	1,401,677	872,893
1932	2,074,042	17.4	1,293,269	10.9	2,382,932	1,419,018	963,914
1931	2,112,760	18.0	1,307,273	11.1	2,443,593	1,434,396	1,009,197
1930	2,203,958	18.9	1,327,240	11.3	2,551,535	1,457,113	1,094,422
1929	2,169,920	18.8	1,369,757	11.9	2,525,000	1,494,000	1,031,000
1928	2,233,149	19.7	1,361,987	12.0	2,612,000	1,492,000	1,120,000
1927	2,137,836	20.5	1,211,627	11.3	2,733,000	1,398,000	1,335,000
1926	1,856,068	20.5	1,257,256	12.1	2,767,000	1,480,000	1,287,000
1925	1,878,880	21.3	1,191,809	11.7	2,829,000	1,411,000	1,418,000
1924	1,930,614	22.2	1,151,076	11.6	2,893,000	1,376,000	1,517,000
1923	1,792,646	22.1	1,174,065	12.1	2,824,000	1,408,000	1,416,000
1922	1,774,911	22.3	1,083,952	11.7	2,792,000	1,333,000	1,459,000
1921	1,714,261	24.2	1,009,673	11.5	2,956,000	1,300,000	1,656,000
1920	1,508,874	23.7	1,118,070	13.0	2,851,000	1,442,000	1,409,000

rate per thousand of the population based on registered data, and estimated totals including both adjustments for under-registration and, for years prior to 1933, estimates for non-registration states; and in the final column the excess of births over deaths, frequently termed the natural increase.

POPULATION BY STATES

Estimates of the civilian population have been made by states for July 1, 1945. These estimates are based partly on a projection forward of the 1943 estimates based on ration book registrations, and partly on current local data. The total civilian population of the United States on this date was smaller than in 1940 by 3.2 per cent, as indicated in Table 2, though the civilian population had increased by 873,123 in the year between July 1, 1944, and July 1, 1945.

The changes in the civilian population were by no means uniform as among the various regions of the United States. In the northeastern states the civilian population decreased between 1940 and 1945 by 6.3 per cent; in the north Central States by 4.8 per cent; and in the South by 3 per cent, while in the West the civilian population increased by 10.5 per cent, mainly as a result of the extensive development of war industries on the Pacific Coast. Among the

TABLE 4

CHANGES IN CIVILIAN POPULATION, BY STATES: 1940 TO 1945

State	Civilian Population		Increase (+) or Decrease (−), 1940–45	Analysis of Changes		
	1945 (July 1)	1940 (April 1)		Excess of Births Over Deaths	Estimated Net Loss to Armed Forces	Estimated Net Gain (+) or Loss (−) Through Civilian Migration
United States...	127,409,297	131,401,985	−3,992,688	7,641,312	12,228,109	*+594,109
New England:						
Maine	772,621	845,181	−72,560	37,466	75,773	−34,253
New Hampshire	445,930	490,638	−44,708	14,740	46,251	−13,197
Vermont	310,211	358,856	−48,645	14,770	26,605	−36,810
Massachusetts	4,086,197	4,313,838	−227,641	137,885	415,358	+49,832
Rhode Island	698,903	707,920	−9,017	26,494	71,674	+36,163
Connecticut	1,768,602	1,706,886	+61,716	79,236	171,354	+153,834
Middle Atlantic:						
New York	12,343,450	13,462,641	−1,119,191	410,087	1,287,871	−241,407
New Jersey	4,104,176	4,156,642	−52,466	146,842	424,241	+224,933
Pennsylvania	9,142,797	9,895,937	−753,140	400,182	1,033,415	−119,907
East North Central:						
Ohio	6,823,137	6,905,092	−81,955	303,647	672,356	+286,754
Indiana	3,387,463	3,427,394	−39,931	166,089	304,583	+98,563
Illinois	7,548,109	7,887,327	−339,218	304,639	738,523	+94,666
Michigan	5,435,092	5,252,922	+182,170	331,600	492,490	+343,060
Wisconsin	2,934,044	3,137,189	−203,145	160,809	247,291	−116,663
West North Central:						
Minnesota	2,484,993	2,791,933	−306,940	159,376	242,005	−224,311
Iowa	2,236,203	2,537,605	−301,402	118,621	195,330	−224,693
Missouri	3,481,949	3,783,760	−301,811	151,919	322,784	−130,946
North Dakota	519,709	641,875	−122,166	45,784	49,707	−118,243
South Dakota	526,607	642,866	−116,259	38,333	49,818	−104,774
Nebraska	1,155,744	1,314,255	−158,511	60,583	106,551	−112,543
Kansas	1,656,588	1,796,988	−140,400	81,527	160,249	−61,678
South Atlantic:						
Delaware	277,455	266,128	+11,327	12,573	24,713	+23,467
Maryland	2,017,971	1,813,132	+204,839	105,402	182,487	+281,924
District of Columbia	836,900	654,513	+182,387	33,855	77,220	+225,752
Virginia	2,810,278	2,649,949	+160,329	215,828	244,287	+188,788
West Virginia	1,716,944	1,901,919	−184,975	160,861	184,647	−161,189
North Carolina	3,333,999	3,566,206	−232,207	364,209	292,614	−303,802
South Carolina	1,797,583	1,886,013	−88,430	222,344	150,744	−160,030
Georgia	3,002,896	3,099,527	−96,631	288,398	238,620	−146,409
Florida	2,059,505	1,890,919	+168,586	124,122	182,439	+226,903
East South Central:						
Kentucky	2,520,537	2,840,944	−320,407	216,567	230,708	−306,266
Tennessee	2,832,480	2,915,536	−83,056	252,113	258,668	−76,501
Alabama	2,728,120	2,821,651	−93,531	279,178	240,416	−132,293
Mississippi	1,990,073	2,183,405	−193,332	210,533	176,266	−227,599
West South Central:						
Arkansas	1,716,914	1,948,054	−231,140	190,597	159,128	−262,609
Louisiana	2,343,406	2,359,410	−16,004	212,630	212,141	−16,493
Oklahoma	1,941,499	2,332,849	−391,350	168,245	205,793	−353,802
Texas	6,338,309	6,389,690	−51,381	553,918	602,713	−2,586
Mountain:						
Montana	452,519	559,381	−106,862	31,321	57,129	−81,054
Idaho	459,938	524,873	−64,935	40,183	52,902	−52,216
Wyoming	234,553	249,873	−15,320	18,481	23,978	−9,823
Colorado	1,060,239	1,121,534	−61,295	64,124	101,482	−23,937
New Mexico	490,302	531,785	−41,483	59,827	50,234	−51,076
Arizona	589,221	497,883	+91,338	46,023	48,983	+94,298
Utah	591,910	550,062	+41,848	57,467	55,192	+39,573
Nevada	135,689	110,124	+25,565	6,243	12,937	+32,259
Pacific:						
Washington	1,953,725	1,732,365	+221,360	95,321	168,267	+294,306
Oregon	1,193,702	1,088,476	+105,226	51,192	112,286	+166,320
California	8,120,105	6,858,039	+1,262,066	369,128	746,886	+1,639,824

---

* This figure represents the net civilian migration from outside the United States. If the migration figures for the several states could be confined to interstate migration alone, the sum of all the state figures would be zero, since in-migrants to one state would have to be out-migrants from other states.

individual states, California showed by far the largest increase, the gain amounting to 1,262,066, or 18.4 per cent, while New York with a loss of 1,119,191, or 8.3 per cent, showed the greatest loss. Estimates of the population on July 1, 1945, are presented by states in Table 4, with 1940 census figures for comparison, and with other figures representing the major factors in the change. In considering the figures in this table it should be kept in mind that, by 1945, the rate of induction into military service had been greatly reduced, as the number of persons in military service approached its maximum around the middle of that year.

On the basis of the 1945 estimates of civilian population, taken in connection with the records of military inductions and computations of natural increase for the several states, estimates of the net gain or loss through civilian migration have been computed. The process is to add the natural increase to the 1940 population, subtract miltary inductions, and compare the results with the estimated civilian population. If the estimated population is greater than the result of these computations, in-migration is assumed; and, conversely, if it is smaller, out-migration to the extent of the difference is estimated. These estimates of the net gain or loss through migration are presented in the last column of Table 4, while the two preceding columns show, respectively, the excess of births over deaths and the estimated net loss from the population of the state to the armed forces.

In general, the classification of the states on the basis of these estimated gains or losses through interstate migration is similar to the classification based on increase or decrease in civilian population. It may be noted, however, that some states, for example New Jersey and Ohio, which show a decrease in civilian population, nevertheless received considerable contributions in the form of in-migrant population from other states-contributions which simply made smaller their population decrease.

MARRIAGES

The most satisfactory current index of changes in the marriage rate is found in a series of monthly releases representing the number of marriage licenses issued in cities of 100,000 or more, which is published (usually within 30 days of the end of the month to which the figures relate) by the National Office of Vital Statistics of the United States Public Health Service. The cities represented in this series contain about one-third of the population of the country, and while increases and decreases in the number of marriages in the United States as a whole have not always followed exactly the same pattern as the figures for these cities, the trends are close enough to make the city data a fairly safe basis for forecasting the national data, which do not become available until some months later. The marriage license data for the cities are presented in Table 5 for 1945 and 1946, by months.

TABLE 5

MARRIAGE LICENSES ISSUED IN CITIES OF 100,000 OR MORE, BY MONTHS: 1946 AND 1945

Month	1946	1945	Increase, Per Cent
Total for year	—	569,289	—
11 months, Jan. to Nov.	716,469	511,984	39.9
December	—	57,305	—
November	60,110	55,691	7.9
October	61,070	52,026	17.4
September	64,113	45,689	40.3
August	74,640	50,108	49.0
July	59,211	49,348	20.0
June	86,448	55,325	56.3
May	73,959	45,005	64.3
April	63,643	39,817	59.8
March	51,144	41,256	24.0
February	59,673	35,635	67.5
January	62,458	42,084	48.4

The increase from an average of 47,441 per month in 1945 to an average of 65,133 for the first 11 months of 1946 is very striking, though it may be noted that a marked increase was taking place in the monthly marriage license figures well before the end of

1945. It is obvious that the principal reason for these increases was the return of service men to civilian life, and it may well be that the marriage rate will shortly revert to the level prevailing in 1944 or even to that prevailing prior to 1940, though there were no indications of the beginning of a recession in the data covering the year 1946.

The three years following 1939 each registered a decided increase in the number of marriages which took place in the United States, the total increase from 1939 to 1942 being 368,000, or 26.2 per cent. The rate per 1,000 of the population increased in the same period from 10.7 to 13.2, which remained the high point until 1946. At this writing (January, 1947) complete reports for the United States are not yet available, but it is estimated (unofficially) that the 1946 total will be well in excess of 2,000,000 and the rate above 15. Marriage data for the United States from 1937 to 1946 are presented in Table 6.

TABLE 6

MARRIAGES IN THE UNITED STATES: 1937 TO 1946

(Figures are estimates, except for the years 1937 to 1940)

Year	Number of Marriages	Rate per 1,000 of the Population
1946*	2,200,000	15.7
1945	1,618,000	11.6
1944	1,452,000	10.5
1943	1,577,000	11.6
1942	1,772,000	13.2
1941	1,696,000	12.7
1940	1,596,000	12.1
1939	1,404,000	10.7
1938	1,331,000	10.3
1937	1,451,000	11.3

* Preliminary unofficial estimate, based on percentage of increase in licenses issued in cities of 100,000 or more.

Incidentally, the number of divorces granted has increased in recent years even more rapidly than the number of marriages, namely, from 251,000 in 1939, or 17.9 per 100 marriages taking place in the same year, to 502,000 in 1945, or 31 per 100 marriages.

TABLE 7

ESTIMATES OF EMPLOYMENT STATUS OF THE CIVILIAN POPULATION OF THE UNITED STATES: 1940 TO 1946

Date	Civilian Population 14 Years Old and Over	Civilian Labor Force		Employed	Unemployed	
		Number	Per Cent of Population		Number	Per Cent of Labor Force
New Series						
December, 1946	105,050,000	58,430,000	55.6	56,310,000	2,120,000	3.6
November, 1946	104,830,000	58,970,000	56.3	57,040,000	1,930,000	3.3
October, 1946	104,590,000	58,990,000	56.4	57,030,000	1,960,000	3.3
September, 1946	104,410,000	59,120,000	56.6	57,050,000	2,070,000	3.5
August, 1946	104,020,000	59,750,000	57.4	57,690,000	2,060,000	3.4
July, 1946	103,650,000	60,110,000	58.0	57,840,000	2,270,000	3.8
April, 1946	102,290,000	56,450,000	55.2	54,120,000	2,330,000	4.1
January, 1946	99,780,000	53,320,000	53.4	51,020,000	2,300,000	4.3
October, 1945	95,040,000	53,170,000	55.9	51,610,000	1,560,000	2.9
July, 1945	93,290,000	55,350,000	59.3	54,400,000	950,000	1.7
Old Series						
July, 1945	93,110,000	53,750,000	57.7	52,660,000	1,090,000	2.0
July, 1944	92,980,000	55,000,000	59.2	54,000,000	1,000,000	1.8
July, 1943	94,360,000	56,040,000	59.4	54,750,000	1,290,000	2.3
July, 1942	98,680,000	56,770,000	57.5	54,340,000	2,430,000	4.3
July, 1941	99,760,000	56,550,000	56.7	51,310,000	5,240,000	9.3
July, 1940	99,950,000	56,420,000	56.4	48,010,000	8,410,000	14.9

EMPLOYMENT

On the basis of reports obtained each month from a representative sample of about 25,000 households in various parts of the country, there have been published every month since March, 1940, estimates of the number of persons in the civilian labor force, the number employed, and the number unemployed. These figures are summarized for months or quarterly intervals from July, 1945, to December, 1946, and for July 1 of each year from 1940 to 1945, in Table 7. It may be noted that two different sets of figures are shown in this table for July, 1945, one for the end of the annual series, and another, somewhat larger, for the beginning of the quarterly and monthly series. The larger figures result from a new enumeration procedure adopted in July of 1945, which has the effect of making the term "labor force" somewhat more inclusive.

The result of the rapid demobilization of the armed forces following mid-year, 1945, appears in the increase of more than 10,000,000 in the civilian population between July, 1945 and July, 1946. The increase in the civilian labor force was not so large as this, partly because of withdrawal from the labor market on the part of large numbers of women who had been employed in the war industries, and a similar withdrawal on the part of some students and elderly men, coupled with the fact that many ex-service men did not get into the labor market immediately on discharge.

The decrease in the labor force from 60,110,000 in July, 1946 to 58,430,000 in December, represents largely the normal seasonal decline in agricultural employment. In fact, employment in non-agricultural industries was materially higher in December than in July, being 49,100,000 in December, as compared with 47,870,000 in July.

The number of unemployed increased from 950,000, or 1.7 per cent of the labor force, in July, 1945 to a maximum of 2,700,000, or 4.9 per cent, in March, 1946, showing a generally downward trend from that point on, with variations from month to month until it reached a low point of 1,930,000 in November, with a slight increase to 2,120,000, or 3.6 per cent, in December, 1946. This last figure, it may be noted, is far lower than the figure forecast in the summer of 1945 for this stage in the reconversion period.

The number of veterans returned in December, 1946, as seeking work was estimated at 840,000, while 1,710,000 veterans were still outside the labor force, including 1,110,000 in school.

SCHOOL ATTENDANCE

The percentages of young men and women attending school decreased sharply during the Second World War, according to estimates based on a survey conducted in October 1945, and involving specific inquiries of a representative sample of 25,000 households scattered throughout the United States. The decrease was most noticeable in the case of young men. It is estimated that in 1945 only 3.6 per cent of the male population 18 to 24 years old were attending school, whereas the 1940 figure was 15.1 per cent. The decrease was owing mainly to the induction into the armed forces of young men who would normally have continued in school, but a substantial part of it resulted from the fact that many of the young men who were not inducted left school early to take jobs. Even for the young men 18 to 24 years old who remained civilians, the percentage attending school in 1945 was only 10.6 per cent, or about one-third less than the percentage for all males in this age group in 1940. There was also a decrease in school attendance of boys 16 and 17 years old, from 68.2 per cent in 1940 to 58.6 per cent in 1945. The percentages of girls and young women 16 to 24 years old attending school also decreased, though not as sharply as the percentages for males.

By contrast, the percentages attending school for children under 16 years old increased appreciably between 1940 and 1945, continuing the long established trend toward a wider participation in educational activities

TABLE 8

SCHOOL ATTENDANCE OF PERSONS 5 TO 24 YEARS OF AGE: 1945 AND 1940

(Data for 1945 represent civilian noninstitutional population and are based on a small sample; data for 1940 are census figures representing total population)

Area and Age	October, 1945			April, 1940		
	Total Number	Attending or Enrolled in School		Total Number	Attending or Enrolled in School	
		Number	Per Cent*		Number	Per Cent
Both Sexes						
5 to 24 years	39,700,000	25,730,000	64.8	46,351,915	26,759,099	57.7
5 years	2,360,000	670,000	28.3	2,142,407	385,160	18.0
6 to 13 years	17,360,000	16,900,000	97.4	17,882,420	16,454,746	92.0
6 years	2,320,000	2,170,000	93.2	2,054,385	1,420,051	69.1
7 to 9 years	6,680,000	6,560,000	98.2	6,487,830	6,119,026	94.3
10 to 13 years	8,360,000	8,170,000	97.9	9,340,205	8,915,669	95.5
14 to 17 years	9,170,000	7,230,000	78.8	9,720,419	7,708,871	79.3
14 and 15 years	4,710,000	4,340,000	92.1	4,828,249	4,347,665	90.0
16 and 17 years	4,460,000	2,890,000	64.9	4,892,170	3,361,206	68.7
18 and 19 years	3,030,000	630,000	20.6	5,018,834	1,449,485	28.9
20 to 24 years	7,780,000	300,000	3.8	11,587,835	760,837	6.6
Male						
5 to 24 years	17,260,000	12,800,000	74.1	23,243,697	13,614,585	58.6
5 years	1,200,000	320,000	26.7	1,087,811	190,842	17.5
6 to 13 years	8,810,000	8,560,000	97.2	9,065,225	8,317,605	91.8
6 years	1,180,000	1,110,000	93.2	1,041,757	710,525	68.2
7 to 9 years	3,400,000	3,320,000	97.6	3,289,255	3,096,174	94.1
10 to 13 years	4,230,000	4,130,000	97.8	4,734,213	4,510,906	95.3
14 to 17 years	4,630,000	3,640,000	78.6	4,902,896	3,869,470	78.9
14 and 15 years	2,440,000	2,230,000	91.5	2,440,453	2,189,880	89.7
16 and 17 years	2,190,000	1,410,000	64.5	2,462,443	1,679,590	68.2
18 and 19 years	810,000	180,000	21.6	2,495,373	769,773	30.8
20 to 24 years	1,810,000	100,000	5.6	5,692,392	466,895	8.2
Female						
5 to 24 years	22,440,000	12,930,000	57.6	23,108,218	13,144,514	56.9
5 years	1,160,000	350,000	30.0	1,054,596	194,318	18.4
6 to 13 years	8,550,000	8,340,000	97.8	8,817,195	8,137,141	92.3
6 years	1,140,000	1,060,000	93.3	1,012,628	709,526	70.1
7 to 9 years	3,280,000	3,240,000	98.8	3,198,575	3,022,852	94.5
10 to 13 years	4,130,000	4,040,000	98.1	4,605,992	4,404,763	95.6
14 to 17 years	4,540,000	3,590,000	79.1	4,817,523	3,839,401	79.7
14 and 15 years	2,270,000	2,110,000	92.7	2,387,796	2,157,785	90.4
16 and 17 years	2,270,000	1,480,000	65.2	2,429,727	1,681,616	69.2
18 and 19 years	2,220,000	450,000	20.3	2,523,461	679,712	26.9
20 to 24 years	5,970,000	200,000	3.3	5,895,443	293,942	5.0

* Percentages for 1945 based on estimates as computed, before rounding.

which was evident up to 1940 in the school attendance figures for older youths also. Since the end of the war the long-term trend of increasing school attendance for persons over 15 years of age has doubtless been resumed. Large numbers of veterans have taken advantage of the educational benefits offered them and returned to school, though it is possible that the formal education eventually obtained by the group between 16 and 24 years old in 1945 will be less than it would have been if the war had not occurred.

The school attendance figures for

October, 1945, are summarized in Table 8, with 1940 census figures for comparison. It may be noted, in connection with this table, that the 1945 survey was made at the beginning of the school term, when practically all children who had reached school age were enrolled in school, whereas the 1940 census was taken toward the end of the school term, when there were considerable numbers of children who had attained school age but who would not be enrolled until the next school year. Further, the school year had been completed in some areas before the date of the census enumeration, so that unduly low figures were returned for school attendance. In some cases, therefore, the actual increase in school attendance may not have been quite as great as the comparative figures would indicate.

Of the total number of persons five to 24 years of age attending school in October, 1945, 71.9 per cent were in elementary school, 25.3 per cent in secondary school, and 2.8 per cent in college or professional school. Practically all of those under 14 years of age were of course in elementary school (with a few, that is, 2.1 per cent, in high schools); and by far the major part of those 20 to 24 years old were in college or professional schools (with only 11.4 per cent in secondary schools); those 14 to 17 years old were mainly in high school; and those 18 and 19 were about evenly divided between high school and college, with a small residue still in elementary grades. In absolute numbers, there were 18,500,000 in elementary classes, 6,500,000 in high school, and 730,000 in college or professional schools. Since the standard elementary course runs through eight years and the secondary course only four years, one may get a better notion of the extent to which elementary school graduates continue into high school by computing a rough average per grade in these two types of school. Dividing the elementary total by eight gives 2,330,000 and dividing the high school total by

TABLE 9

PERSONS ATTENDING SCHOOL, BY TYPE OF SCHOOL ATTENDED: OCTOBER, 1945

(Data based on a small sample of the civilian noninstitutional population)

Age and Sex	Total Attending or Enrolled in School	Elementary School		High School		College or Professional School	
		Number	Per Cent of Total	Number	Per Cent of Total	Number	Per Cent of Total
Total, 5 to 24 years	25,730,000	18,500,000	71.9	6,500,000	25.3	730,000	2.8
5 to 13 years	17,570,000	17,210,000	97.9	370,000	2.1	—	—
14 to 17 years	7,230,000	1,280,000	17.7	5,790,000	80.1	160,000	2.2
18 and 19 years	630,000	20,000	2.6	310,000	49.1	300,000	48.4
20 to 24 years	300,000	—	—	30,000	11.4	260,000	88.6
Male, 5 to 24 years	12,790,000	9,470,000	74.1	3,120,000	24.4	200,000	1.6
5 to 13 years	8,880,000	8,730,000	98.3	150,000	1.6	—	—
14 to 17 years	3,640,000	740,000	20.2	2,850,000	78.3	50,000	1.4
18 and 19 years	180,000	10,000	5.8	110,000	60.3	60,000	33.9
20 to 24 years	100,000	—	—	10,000	14.5	90,000	85.5
Female, 5 to 24 years	12,930,000	9,030,000	69.8	3,380,000	26.1	530,000	4.1
5 to 13 years	8,700,000	8,480,000	97.5	220,000	2.5	—	—
14 to 17 years	3,590,000	550,000	15.2	2,940,000	81.9	110,000	2.9
18 and 19 years	450,000	10,000	1.3	200,000	44.7	240,000	54.1
20 to 24 years	200,000	—	—	20,000	9.9	180,000	90.1

four gives 1,630,000; and these two figures indicate a very satisfactory continuation through the 12 grades of pre-college education provided in our American system, there being, of course, a gradual dropping out from year to year through the elementary grades, and a somewhat more rapid dropping out through the secondary grades, as evidenced by the more detailed figures of the 1940 census.

FAMILIES

The number of families in the United States increased from 35,087,440 in 1940 to 37,900,000 in February 1946, the average population per family changing in the same period from 3.8 to 3.7. The number of families with a male head actually decreased during the war, from 29,734,200 in 1940 to 29,250,000 in May, 1945, but increased rapidly, with the demobilization of the military forces, to 31,300,000 in February, 1946. Conversely, the number of women acting as heads of families increased from 5,353,240 in 1940 to 8,210,000 in 1945, and then decreased to 6,600,000 in February, 1946, largely as a result of the return of husbands to their homes after discharge from the armed forces. These figures, with data also for May, 1944, are summarized in Table 10. All of the figures except those for 1940 are based on surveys of 25,000 or 30,000 representative families scattered throughout the United States, and are subject of course to possible sampling error.

One further very significant detail appears in the available tabulations, namely, the number of female heads of families who were classified as "Married, husband absent." This number increased from 785,180 in 1940 to 2,770,000 in 1944 (and presumably to a still larger number in 1945, though this classification is not available for that year), but had declined again in 1946 to 1,060,000. In another survey, classifying individuals rather than family heads, it was indicated that in 1944 nearly two-thirds of the married women with "husbands absent," that is, not living in the household at the time of the survey, were women whose husbands were in the armed forces; and even in 1946, military service afforded the explanation for more than one-half the absent husbands.

Between 1940 and 1945 there was a decline of about 800,000 in the number of rural-farm families, an increase of about 100,000 in the number of

TABLE 10

FAMILIES BY MARITAL STATUS AND SEX OF HEAD: 1946, 1945, 1944, AND 1940

(Data for 1946, 1945, and 1944 based on a small sample)

Sex and Marital Status of Head	Number of Families				Per Cent			
	Feb. 1946	May 1945	May 1944	April 1940	Feb. 1946	May 1945	May 1944	April 1940
All families	37,900,000	37,450,000	37,040,000	35,087,440	100.0	100.0	100.0	100.0
Male head	31,300,000	29,250,000	29,510,000	29,734,200	82.6	78.1	79.7	84.7
Married, wife present	28,790,000	26,620,000	26,350,000	26,605,800	76.0	71.1	71.1	75.8
Other marital status	2,510,000	2,630,000	3,160,000	3,128,400	6.6	7.0	8.5	8.9
Married, wife absent	200,000	(*)	520,000	447,080	0.5	(*)	1.4	1.3
Widowed and divorced	1,400,000	(*)	1,420,000	1,363,300	3.7	(*)	3.8	3.9
Single	910,000	(*)	1,220,000	1,318,020	2.4	(*)	3.3	3.8
Female head	6,600,000	8,210,000	7,530,000	5,353,240	17.4	21.9	20.3	15.3
Married, husband absent	1,060,000	(*)	2,770,000	785,180	2.8	(*)	7.5	2.2
Widowed and divorced	4,480,000	(*)	3,690,000	3,666,900	11.8	(*)	10.0	10.5
Single	1,060,000	(*)	1,070,000	901,160	2.8	(*)	2.9	2.6

* Data not available.

TABLE 11

FAMILIES BY MARITAL STATUS AND SEX OF HEAD IN URBAN AND RURAL AREAS FOR THE UNITED STATES: FEBRUARY, 1946 AND APRIL 1940

(Data for 1946 based on a small sample)

Year and Area	All Families	Families with Male Head			Families with Female Head
		Total	Married, Wife Present	Other Marital Status	
1946 Total	37,900,000	31,300,000	28,800,000	2,500,000	6,600,000
Urban	24,010,000	19,120,000	17,570,000	1,550,000	4,890,000
Rural-nonfarm	7,630,000	6,420,000	5,950,000	470,000	1,210,000
Rural-farm	6,260,000	5,760,000	5,280,000	480,000	500,000
Per cent	100.0	100.0	100.0	100.0	100.0
Urban	63.4	61.1	61.0	62.0	74.1
Rural-nonfarm	20.1	20.5	20.7	18.8	18.3
Rural-farm	16.5	18.4	18.3	19.2	7.6
April, 1940					
Total	35,087,440	29,734,200	26,605,800	3,128,400	5,353,240
Urban	20,749,200	16,947,200	15,230,640	1,716,560	3,802,000
Rural-nonfarm	7,261,340	6,259,860	5,570,000	689,860	1,001,480
Rural-farm	7,076,900	6,527,140	5,805,160	721,980	549,760
Per cent	100.0	100.0	100.0	100.0	100.0
Urban	59.1	57.0	57.2	54.9	71.0
Rural-nonfarm	20.7	21.1	20.9	22.1	18.7
Rural-farm	20.2	22.0	21.8	23.1	10.3

TABLE 12

FAMILIES BY NUMBER OF CHILDREN OF SCHOOL AGE (6 TO 17 YEARS) IN URBAN AND RURAL AREAS OF THE UNITED STATES: FEBRUARY 1946

(Data based on a small sample)

Number of Children 6 to 17 Years Old	United States Total	Urban	Rural—Nonfarm	Rural—Farm
All families	37,900,000	24,010,000	7,630,000	6,260,000
No children 6 to 17	23,540,000	15,540,000	4,630,000	3,370,000
One child 6 to 17	7,470,000	4,840,000	1,480,000	1,150,000
Two children 6 to 17	4,000,000	2,330,000	860,000	810,000
Three or more 6 to 17	2,890,000	1,300,000	660,000	930,000
Per cent	100.0	100.0	100.0	100.0
No children 6 to 17	62.1	64.7	60.7	53.8
One child 6 to 17	19.7	20.2	19.4	18.4
Two children 6 to 17	10.6	9.7	11.3	12.9
Three or more 6 to 17	7.6	5.4	8.7	14.9

rural-nonfarm families, and an increase of about 3,000,000 in urban families, doubtless the result of the concentration of war production in urban centers. Between May, 1945, and February, 1946, the farm figure remained practically unchanged, the rural-nonfarm families increased by 250,000, and the urban families continued to increase, though at a much slower rate—only a little more than 100,000 in this period. Family data for rural and urban areas are presented in greater detail for 1940 and 1946 in Table 11.

In February 1946, there were 14,360,000 families with children of school age, that is, 6 to 17 years old, as compared with 13,771,000 in 1940. The 1946 total represented 37.9 per cent of all families, comprising 19.7 per cent with one child of school age, 10.6 per cent with two, and 7.6 per cent with three or more. In urban areas taken alone, 35.3 per cent of the families contained children of school age, as compared with 39.3 per cent in rural-nonfarm areas and 46.2 per cent in rural-farm areas. These figures give some indication of the number and proportion of families directly interested in school and related community activities.

Most of the children currently of school age were born during the 30's when birth rates were low. The number of families with children of school age in February 1946, therefore probably represents a level from which there will be a rising trend as the children born during the high birth rate years since 1940 reach school age.

RACE CONDITIONS IN THE UNITED STATES

By L. Howard Bennett
American Council on Race Relations

GENERAL

The degree of unity which a common peril made imperative during the war years began to disintegrate immediately following V-J Day and by 1946 there was positive evidence that the older, peacetime luxuries of prejudice, violence, and oppression were making a definite bid to reestablish themselves on the American scene.

The year was marked, on the one hand, with interracial violence: intimidation, beatings, lynchings, and riots, but, on the other hand, the very forces of intolerance and persecution set in motion a significant wave of protest and constructive democratic action. The boldness of the emerging hate groups, the blatant manner of their leaders, the dastardliness of their crimes generated a counter movement that sought to redress the imbalance in our national life. Numerous efforts were undertaken by an aroused citizenry and an embarrassed national government to suppress the rise of anti-democratic forces, outlaw hate groups, preserve citizenship rights, and improve racial conditions.

ANTI-SEMITISM

Anti-semitism, which to a marked degree went underground during the war years, became manifest in several sections of the country. Antisemitic literature increased throughout the country. Well organized campaigns were initiated in New York and Minneapolis to distribute and sell through the mails anti-semitic literature, including the famous anti-Jewish tract, the Protocols of Zion. Wherever postal authorities discovered these activities, they promptly suppressed them. Jewish welfare agencies reported that, with the ending of the war and the demise of the Fair Employment Practice Committee, an increasing number of Jews was being rejected for and discharged from employment. It was also observed that hotel and resort literature was filled with discriminatory specifications indicating the tenacity with which this practice persists in spite of laws in several cities and states prohibiting such advertisement.

There was violence and vandalism against Jews and their Synagogues. Altars in several eastern synagogues were desecrated, scrolls burned, flags torn, and synagogues set on fire. In two Brooklyn neighborhoods, as well as in Philadelphia and in Red Bank, Tenn., Jewish persons were set upon and attacked by hoodlums. A fiery cross bearing the letters KKK was burned on the Zeta Beta Tau Jewish Fraternity House of the University of Southern California and the letters KKK smeared in tar on the building. During the Jewish high holidays, Commissioner of Police Wallender of New York considered it a desirable precaution to assign 1,000 patrolmen to protect synagogues and worshippers in New York City.

In 1945, President Truman expressed the desire that 39,000 European refugees, many of them Jews, be admitted to the United States during 1946. He called on several Federal agencies to expedite the admission. Reports indicate that this program has not been effectively carried out. The Immigration and Naturalization Service reports that, during the first eight months of the year, only 3,452 displaced refugees reached these shores. Not all of these were Jews.

RESETTLEMENT OF JAPANESE AMERICANS

In 1942, there were approximately 127,000 persons of Japanese ancestry in the United States. The hysteria of war and the calculated plans of anti-Japanese American groups on the West Coast precipitated the mass evacuation of the Japanese to Relocation Centers for most of the war period. The resettlement program of the War Relocation Authority succeeded in dispersing approximately 110,000 persons of Japanese ancestry to all sections of the country. Nearly every state in the union received some resettlers, but the majority of the evacuees settled in the mid-western and eastern states. Before the war, 91 per cent of the total Japanese population of the United States lived on the West Coast, but only half of the approximately 110,000 evacuees have returned there. The Japanese have moved eastward to Minneapolis, St. Paul, Milwaukee, Chicago, Denver. The largest group, approximately 23,000, has settled in Chicago. Constellations of Japanese Americans are to be found also in New York, Washington, and St. Louis.

Church and civic organizations and governmental agencies have worked to insure democratic acceptance of the resettlers in the communities into which they have migrated. The commendable record of the 442nd Combat Team (Japanese Americans) and the participation of the Nisei in the whole war effort aided in effecting good public relations for this uprooted and dispossessed group. There was some intimidation of and violence against Japanese Americans in isolated communities on the West Coast, but for the most part the resettlement process has gone on without violence or an increase of hostility.

One of the problems confronting Japanese Americans, like all other elements of the population seeking reestablishment after the dislocations of the war, has been obtaining adequate housing and living space. In some instances, employment opportunities have been denied this segment of the population. This has been infrequent, for the unexpected heavy post-war demands for workers have tended to mitigate employment discrimination against the Japanese.

The National Opinion Research Center at the University of Denver, on the basis of a poll recently conducted, stated that hostile feelings against the Japanese living in the United States apparently are decreasing. The manner in which the resettlement program has proceeded corroborates this finding.

JAPANESE AMERICAN ESCHEAT CASES

Protest is mounting against the filing of escheat cases against Japanese American property owners by the State of California. These cases seek to have such property returned to the state on the basis that the Alien Land Act of the State of California makes it illegal for aliens to own and hold property. This legality is questioned in as much as the title to the property in litigation is held by persons of Japanese ancestry born in the United States and who consequently are citizens of the United States. The 1940 census estimated that 63 per cent of the persons of Japanese ancestry are citizens of this country.

Several suits have been filed by Japanese Americans in the Federal courts seeking to prove the unconstitutionality of the section of the Federal Nationality Act which limits naturalization to "white persons" only. They contend that this section of the act is in conflict with the 15th Amendment of the Constitution. Because of a recent amendment to the Nationality Act, Japanese Americans have pointed out they are nationals, not aliens.

INDEMNIFICATION FOR EVACUATED JAPANESE AMERICANS

On April 24, 1946, Secretary of the Interior Krug sent a letter to the President of the Senate setting forth the reasons why the Administration wanted legislation enacted providing for the indemnification of Japanese Americans evacuated from the West Coast by the Western Defense Command in 1942 on grounds of "military necessity." The bill (S2127) is being sponsored by Senator Ellender of Louisiana and in the House by Representative Eberharter of Pennsylvania. It would establish an Evacuation Claims Commission in the Department of the Interior. The Commission would have jurisdiction to settle claims made by persons of Japanese ancestry "for damage to or loss of real or personal property, or other impairment of assets that arose from or as a natural or reasonable consequence of the evacuation and exclusion program."

A bill has been introduced in Congress by Joseph Farrington, Republican delegate from Hawaii, removing racial restriction from Federal naturalization and immigration statutes. The bill (Housing Resolution HR857) is similar to the one introduced by Farrington in the last Congress. It would make it possible for those Japanese now classified as aliens to become citizens. It should be noted that the 79th Congress has added Filipinos and Indians to the list of persons eligible for citizenship. This suggests further inclusions in as much as it cracks the principle of excluding all Asiatic and Pacific islanders, other than Hawaiians, from eligibility to American citizenship.

MIGRATION AND HOUSING OF NEGROES

The Second World War occasioned and set in motion a significant internal migration of peoples. The demands for industrial workers attracted millions of people to new industrial centers. The migration of Negroes was exceedingly heavy. It was first a movement from southern rural communities to southern urban and industrial centers. From there it fanned out to northeastern, middle west, and far west industrial and war production centers. Studies conducted by welfare agencies more than a year ago indicated that Negro workers for the most part would remain in the congested production centers to which they had gone. The demobilization of the nation's armed forces has made another group with potentially high mobility. This is especially true among Negro veterans, and one year after V-J Day, large metropolitan centers of the northeast and middle west are still receiving large numbers of Negro immigrants, many of them with war service records.

The surge of war workers to the industrial centers in the north, south, and far west caused a mounting crisis in housing in these regions. This crisis had an inordinate effect on housing conditions among Negroes and other minority groups, and the already bad situation worsened and became acute. Cities like Chicago, Detroit, Cleveland, Buffalo, St. Louis, Los Angeles, and San Francisco were the hardest hit by the housing shortage. By 1940, all these cities, with the possible exception of Los Angeles and San Francisco, were already in the throes of a badly congested housing situation as it pertained to minority groups. It is estimated that, during 1940-1945, Chicago's Negro population increased 95,000 and Detroit's, 63,000. Cleveland witnessed an increase of 23,000, while Buffalo experienced an increase of 7,000 Negroes between 1940 and Aug. 1, 1943. In San Francisco, prior to 1940, there were only 4,000 Negroes according to the 1940 census. By 1944, the number of Negroes in San Francisco had increased to 23,000. These significant increases are indicative of the heavy stress and strain placed on housing facilities. Congested living, expanding neighborhoods, the competition for housing space have occasioned growing tensions and unrest.

Returning veterans and ever-coming in-migrants from the south continue to add to the housing pressures. The post-war program for housing construction has made no appreciable dent on the backlog of need for housing of Negroes. Heavy overcrowding in inadequate and already run-down facilities during the war years, without even necessary repairs and renovations, hastened the rapid deterioration of existing housing. This has meant that, as these units became "uninhabitable" by standards of decency, they were either closed to occupancy, reducing the number of units available, or the conditions under which the people were forced to live became increasingly worse. The latter has taken place.

A convincing array of evidence is available in Chicago to substantiate the observations of students in the field of intergroup relations that housing is a major factor contributing to race conflict. It is expressed in the violence attended to the moving of Negro families into borderline and new areas in which Negroes previously have not lived. In July, it was reported that, in the Chicago area alone during the more than two-year period between May 1, 1944 and July 20, 1946, there had been 46 arson-bombings and other acts of terrorism against homes occupied by Negroes. Thirty-five of these outbreaks occurred in the first seven months of 1946. Homes occupied by Negroes in these areas, which are considered by the dominant whites as being "off-side," were not only burned but bombed, buildings wrecked, stench bombs thrown through windows, buildings and particularly windows riddled with rifle shots, buildings stoned. This form of violence and terror has not confined itself to the northern urban centers; it has also occurred in the south.

NEGROES IN RECONVERSION AND EMPLOYMENT

More than 200,000 Negro workers were involved in the strikes of early 1946. It is significant to observe the contrast between the status and extent of participation of the Negro worker in the strikes following the Second World War and his status and participation in the strikes following the First World War when the Negro worker was used as a reservoir from which to secure "scabs" and strike breakers. In 1946, the Negro worker, particularly in the mass production industries, was an integral part of the labor movement and as such was liable to gain the benefits or suffer the losses of organized labor as a whole. The status of the Negro worker as a union member in 1946 was a stabilizing factor in racial relations, a positive factor in minority group employment opportunities and a deterrent to racial violence.

In the face of disproportionate lay-offs and cutbacks of Negroes in the early months of 1946, as reported by the President's Fair Employment Practice Committee, there stands out the effective role that unions can play in the area of fair employment practices. Local 450 of the United Electrical, Radio and Machine Workers at Sperry Gyroscope Co. voted unanimously that a clause be inserted in their contract with the company stipulating that the same ratio of Negro workers be maintained as was in existence Nov. 15, 1945. This was a singular instance in which a major union resorted to equity principles in order to offset the hardships that would afflict minority group workers by the inflexible operation of the traditional application of the rule of seniority. Another union, United Public Workers (CIO) in Washington, protested a provision in a proposal being drafted by the Civil Service Commission which the local union believed exposed its nearly 10,000 Negro members to prejudicial treatment.

The Fair Employment Practice Committee came to an end in 1946. Early in the 79th Congress when the bill to establish a permanent Fair Employment Practice Commission was introduced in the Senate, a small group of Southern Senators started a filibuster which culminated in the defeat of the legislation in February. In the very midst of the filibuster that was being conducted to kill the permanent legislation, the temporary wartime committee was receiving reports from its field offices indicating that the removal of wartime restraints was beginning to be reflected in disproportionate number of layoffs among Negro workers. The chairman of the President's Committee reported in January 1946 that Negroes accounted for 18 per cent of the decrease in the nation's employment, while they constitute about 9 per cent of the population.

The National Urban League, in a survey of 50 American cities, disclosed that Negro veterans were not sharing equitably in job opportunities or opportunities for job training. It stated that the United States Employment Service offers them only pre-war traditional jobs with few opportunities for on-the-job-apprenticeship training. The final report of the FEPC stated that the wartime gains of Negroes, Mexican Americans, and Jewish workers were being lost through an unchecked revival of discriminatory practices. No exceptions were made to the veterans of these minority groups. They faced the same difficulties that minority group workers as a whole encountered in obtaining training and finding work.

The extent of Negro and minority group workers' displacement and unemployment attained during the first months of 1946 did not continue throughout the year. The heavy employment occasioned by increased production and industrial activity reabsorbed minority group workers who for the most part were the first to be released with the cancelling of war contracts. While discrimination in employment continued, unemployment among Negroes did not mount to the extent anticipated by students of the problem.

An Executive Order and subsequent congressional legislation transferred the United States Employment Service from the states to the National Government during the early days of the defense and war period. President Truman, high government officials, and minority and labor groups were desirous of having the United States Employment Service remain under Federal control and jurisdiction during the entire reconversion period. The President's request for the retention of the employment service under Federal supervision was based on the sound proposition that under such auspices, the Employment Service would be in a better position to meet the strains, stresses, and dislocations of reconversion as both labor demand and labor supply shifted. Minority groups and their allies, however, had a more specific reason for wanting the service to remain federalized: they feared the revival of gross discrimination in employment under state supervision. Two USES offices came in for special citing because of segregation and discrimination. They were the offices in St. Louis, Missouri, and ironically, the Washington office in the nation's capitol. Four charges were levied against the Washington office: (1) applicants had to be interviewed by members of their own race, (2) there were racial designations on the card file of applicants, (3) separate offices existed for Negroes and whites, (4) separate lines had to be formed for persons seeking jobs or filing for unemployment compensation, the lines being formed on the basis of race. These charges were investigated by the Civil Service Commission and found to be substantially true. After a strong letter of protest about segregation in the Washington office was lodged by Secretary of Commerce, Henry E. Wallace, and by several organizations with Secretary of Labor Schwellenbach, he ordered an end to segregation in the Washington USES office.

NEGRO EDUCATION AND ACHIEVEMENT

There have been several significant developments in education during the year within the scope of race relations. Negro teachers in the South continue their efforts through suits in the courts and negotiations with school boards for the equalization of salaries. An area long neglected in the fight for equal educational opportunities—insistence on comparable physical facilities—has recently come in for direct attack. (See "Negro Education" p. 1041).

THE NEGRO IN POLITICS

On the basis of the decision handed down by the U. S. Supreme Court in the Texas primary case, the largest number of Negroes since Reconstruction enrolled for participation in the primary elections of the southern states. There were heavy Negro registrations in Georgia, Mississippi, and Arkansas. In each state, attempts were made to dissuade the Negro voters from participating in the election. The Negro vote was instrumental in electing Mrs. Helen Douglas Mankin to Congress from the Fifth Congressional District in Georgia and helped defeat Roy V. Harris, Speaker of the Georgia House of Representatives, who campaigned on a white-supremacy platform. The Georgia gubernatorial and the Mississippi senatorial campaigns were notable for the way in which the race issue was played up. In Mississippi, charges were filed against Senator Theodore Bilbo for encouraging intimidation and coercion, and in some instances physical violence, in order to keep Negroes away from the polls. A Senate Investigating Committee held hearings in Jackson, Miss., and Bilbo's right to a seat in the Senate has been contested. Eugene Talmadge, running on a platform that called for upholding white supremacy and restoring the white Democratic primary in defiance of a Supreme Court decision, was elected Governor of Georgia, but he died before taking office.

THE GILLEM REPORT AND NEGROES IN THE ARMED FORCES

Growing out of the confused opinions and controversies concerning utilization of Negro personnel in the Army, a Board of Generals was appointed in 1945 to study Army policy with reference to the use of Negro personnel. The Board functioned under the chairmanship of Lieut. Gen. Alvin Gillem, Jr. In March 1946, the Board issued its report, pointing out that the nation must not fail to use the assets developed through closer relationship of the races during the war years, stating: "While the lessons learned from the service of the Negro in the war just concluded are still fresh in our minds, and while the people as a whole are still military minded, it is the concerted opinion of this Board that a progressive policy for a greater utilization of the Negro manpower be formulated and implemented now, if the nation is to establish its military structure on the experiences of the past." (*The New York Times*, March 4, 1946).

The report called for a progressively flexible policy on the part of the War Department with the objective in view of continued improvement, physically and mentally, of all of the nation's citizens. Significantly, it stated that "at the earliest practicable moment any special consideration based on race" must be eliminated. Army policies should point toward an evaluation of the Negro on the basis of individual merit and ability. The report closes with the statement that "vacillation or weak implementation of strong policy will adversely affect the Army. The policy which is advocated is consistent with the democratic ideals upon which the nation and its representative Army is based."

There were several features of the report which fell short of the expectations of liberal and minority groups in the country. The report did not advocate the immediate dropping of segregation and discriminatory devices. It did call for some relaxing of the rigid segregation pattern in the composition of unit personnel. It is a step in the right direction, but not a long one.

The Army came in for severe criticism for failure to permit voluntary enlistment of Negroes when there was reached, according to the Army, a too large percentage of Negroes. Court action was brought to force the Army to admit enlistees without reference to race. In October, the Army announced that it would again accept Negro enlistees but only those who passed an examination indicating training equal to a high school education. This was a standard higher than that required of non-colored enlistees. Even though the Gillem report was not entirely satisfactory, there are indications that the Army intends to test its policy of gradual de-segregation at Army installations overseas and at home.

The Navy, once considered to be much less democratic than the Army and certainly offering fewer opportunities for its colored personnel, announced during the year the dropping of all restrictions limiting the areas. services, and grades which are open to Negroes and other personnel of color. This democratic policy was stated by Secretary of the Navy Forrestal in a letter to his special advisor, Lester B. Granger.

NEGRO PETITION TO UN

The National Negro Congress, which met in Detroit during the early summer, sent a petition under the provisions of Article 71 of the United Nations Organization charter to the Secretary General of the UN requesting the organization to probe racial discrimination. The Congress contended that Negroes had failed to receive relief from oppression through constitutional appeals and therefore found it necessary to bring this vital issue to the body's attention.

RACIAL VIOLENCE

The isolated interracial clashes that followed the cessation of hostilities with Japan were only the forerunners to more disturbing intergroup clashes in 1946. There were two race riots, many beatings, and numerous lynchings. Both of the riots occurred in the South. The first occurred in Columbia, Tenn. in February. The second occurred in August in Athens, Ala. when a mob of more than 2,000 whites ran roughshod through the city beating and mauling Negro men, women, and children indiscriminately. (For full accounts of the two riots see *Monthly Summary* issues Vol. 3, Number 8, March 1946, and Vol. 4, Numbers 1 and 2, August–September 1946).

In Freeport, Long Island, in February, the four Ferguson brothers, veterans of the war, were celebrating their first reunion in several years. They sought service in a tearoom operated by whites across from the Freeport Bus Terminal and became engaged in an argument with the proprietor when he refused to serve them. They left the tearoom but while returning to the Bus Station. Joseph Romeika, a police officer, accosted them and lined them up against the wall. The police officer killed two of the brothers, wounded one, and arrested the fourth, claiming that during a routine questioning of the men, one of the brothers "reached for his hip pocket."

The most shocking crime of the year was the lynching of four Negroes on July 25 near Monroe, Georgia, by a mob of unmasked white men. The victims of this multiple lynching were Mr. and Mrs. George Dorsey and Mr. and Mrs. Roger Malcolm. Mrs. Dorsey and Roger Malcolm were sister and brother. Only one of the victims was charged with any crime. The others were admittedly innocent. Roger Malcolm had been arrested for having injured Barney Hester, a white man on whose plantation he lived.

Conflicting stories circulate as to the reasons why Malcolm had attacked Hester. One version is that Hester was the innocent victim of his attempt to stop a fight between Roger Malcolm and his wife. The second is that Roger Malcolm resented the undue attention Hester had been paying his wife. At the time, a mob gathered and a lynching was averted only when a white woman who had known Malcolm for many years intervened in his behalf.

The lynching of these four Negroes, more than any single event during the year, aroused the nation. Governor Ellis Arnall of Georgia immediately dispatched the Georgia Bureau of Investigation to the scene and asked for Federal assistance. He offered rewards up to $10,000 for information that would lead to the arrest and the conviction of the perpetrators. Rewards were offered by groups and organizations all over the country totaling more than $70,000. In spite of the efforts of state, Federal and other investigators to secure information that would lead to the arrest, the grand jury, on Dec. 19, reported its inability to identify any guilty persons and therefore could make no indictment.

MINORITY GROUP VETERANS

The veterans constitute a special group in the nation. Minority group veterans constitute a special group among them. Negro, Mexican, and Japanese American veterans have suffered the same disabilities and disadvantages which have been more or less associated with the minority groups of which they are a part. The unfair and discriminatory treatment of minority group veterans has been a constant source of tension and a highly charged potential for serious intergroup violence. The Negro veteran particularly has faced the difficulties of job discrimination, discrimination in housing facilities, and failure on the part of USES to refer him to jobs commensurate with his Army-developed skills and training. For the most part, they have been referred to menial jobs. In addition, in many communities, rather than refer the minority veteran to gainful jobs, they have been certified for unemployment compensation. There have been few opportunities for Negro and other minority group veterans to participate in the apprenticeship-training programs. This, of course, eliminates them from training for skilled jobs.

To meet the growing difficulties confronted by veterans, the American Council on Race Relations called a National Emergency Conference on Minority Veterans Problems which was held in New York, April 6, 1946. Growing out of this meeting, a National Action Conference on Minority Veterans Problems was held in July in New York City. Representatives from the National Emergency Conference took specific recommendations directly to responsible authorities in the Veterans Administration, USES, Department of Labor, Retraining and Reemployment Agency, United States Office of Education and National Housing Agency.

The United Negro and Allied Veterans of America which was formed to secure the "full measure of rights" which Negro and other veterans are entitled to receive, was organized in April. The organization stresses the need for organizing 600,000 Negro veterans who reside in southern states.

THE KLAN AND COLUMBIANS, INC.

The incipient revival of the Ku Klux Klan and the bold emergence of a brazen competitor, the Columbians, Inc., took place in 1946. It is alleged that the Klan was instrumental in mobilizing the votes and intimidating and otherwise coercing Negroes in Mississippi and Georgia during the campaigns of Senator Theodore Bilbo and gubernatorial candidate Eugene Talmadge, respectively. The Klan held open air ceremonies at Stone Mountain near Atlanta, and has been known to be active in Tennessee, Alabama, California, South Carolina, Mississippi, Pennsylvania, and New York. In several states, law enforcement officials have been active in the effort to outlaw the Klan and suppress their activities. Governor Arnall directed Assistant Attorney General Dan Duke to take legal action for revocation of the charter of the Klan in Georgia. New York, California, Kentucky, New Jersey, and Pennsylvania have officially revoked the Klan's charters. President Truman has directed Attorney General Clark to use the resources of his office to maintain and preserve civil rights and outlaw subversive and anti-democratic organizations.

More brazen than the Klan has been the Columbians, Inc. This hate organization, with headquarters in Atlanta, advocates opposition to Negroes, Jews, Communists, and the rich "who oppress the masses." The organization was chartered in Atlanta in August 1945. It has attacked Negroes in Atlanta and has attempted to prevent them from moving into homes which they have purchased in previously designated white neighborhoods. It threatened those whites who opposed it with death, and defied police officers. Organizations throughout the country denounced Columbians for its avowed purposes of fomenting racial and religious strife. The Fulton County (Ga.) Grand Jury recommended that the charter of the Columbians be revoked. The state Attorney General instituted revocation proceedings. The organization's officers said they did not need a charter in order to operate.

Recognizing the shortcomings of existing Federal statutes to deal with subversive organizations, and in order to protect the civil rights of citizens of the United States, Attorney General Clark indicates that he will seek the strengthening of existing Federal legislation, and President Truman has appointed a Committee on Civil Rights to study the existing machinery to protect civil liberties and make recommendations for its improvement.

CHRISTIAN ORGANIZATIONS FOR DEMOCRACY

Church and Christian organizations took a decisive and courageous stand on the question of segregation and discrimination. The Federal Council of Churches of Christ in America representing the vast body of Protestant communicants in America, in its annual meeting in Columbus, O., renounced the pattern of segregation in race relations and pledged itself to work for a non-segregated church and a non-segregated society. Many Catholic groups, including the Social Action Department of the National Catholic Welfare Conference, meeting in Kansas City in November, adopted a resolution calling for equal services to Negroes with all other citizens. The Conference also went on record as favoring the participation of Negroes in all lay-organizations of the Catholic Church.

Both the YMCA and the YWCA in their annual meeting at Atlantic City approved and passed measures for their associations' activities that directly came to grips with the problems of race relations. The YWCA developed a program of 35 points that would include Negro members in "the main stream of Association life" that would lead to and effect the elimination of segregation. The YMCA endorsed a program of less strength and forthrightness, but along the same lines. The policies adopted at the Atlantic City meetings of the YMCA and YWCA have received implementation in several communities, notably Cleveland, Chicago, and New York. The Congregational and Presbyterian denominations made significant pronouncements concerning the practice of Christian brotherhood within the framework of the church. The Congregationalists stated: "We repent the sin of racial segregation as practiced both within and outside our churches, and respond to the mandate of the Christian gospel to promote with uncompromising word and purpose, the integration in our Christian churches and our democratic society of all persons of whatever race, color or ancestry, on the basis of equality and mutual respect in our exclusive fellowship." The Presbyterian Church, USA (northern) declared racial segregation an unchristian practice.

OFFICIAL TRENDS AND DEVELOPMENTS

Until recently government—national, state, and local—assumed no official responsibility for intergroup problems. In fact, they scarcely recognized that such problems existed. The relative success of the Fair Employment Practices Committee stimulated the agitation for permanent, legislatively created state agencies to deal with problems of discrimination. This public clamor resulted in the establishment of several State Commissions Against Discrimination. In 1945 the legislatures of New York, New Jersey, Wisconsin, and Indiana enacted non-discrimination statutes. In 1946 Massachusetts followed suit and enacted a law creating the Massachusetts Fair Employment Practice Commission. At one time, 22 states had bills before them for the establishment of FEPC laws. At the present time, groups in 12 states are pressing for legislative enactment of fair employment practice statutes.

There has been the extension of this movement from the Federal level to the state, and from the state level to the local, municipal government level. Since the rash of race riots during the spring and summer of 1943, more than 38 official race relations committees have been formed. Among them there has been a high mortality. Fifty per cent of them have either become inactive or have gone out of existence. A recent study completed at the American Council on Race Relations shows that today there are 14 major and five minor official committees in operation and functioning today.

Three of the official committees in race relations have been created as a result of legislative action on the part of the city government. Ordinances have been passed, making them an organic part of the city government. These official agencies are the Cleveland Community Relations Board, Toledo Community Relations Board, and City of Buffalo Board of Community Relations. The other committees get their official status either through the executive power inherent in the office of the mayor who appointed them or by receiving appropriations from the city on the action of the City Council, or by both.

This distinction between official agencies on the state level and local level should be noted: the state agencies are directed to deal specifically with the problem of discrimination in employment, with projection into the fields of health, education, housing, recreation, *etc.*, being ancillary; while, where there is stated substantive jurisdiction, the local agencies deal with the entire gamut of intergroup and human relations, with the disposition of the agency personnel and board composition being the main factors that determine priority in consideration of problem areas.

The emergency of these official agencies represent a desirable and new assumption of responsibility by government for playing a positive role in interracial and human relations.

UNOFFICIAL VOLUNTARY ORGANIZATIONS

Unofficial, voluntary agencies in the field of race relations are much more numerous than the official. They are national, regional, state, and local in scope and area of operation. The *Directory of Agencies in Race Relations, National, State and Local* (Julius Rosenwald Fund, 1945) and supplementary data in the files of the American Council on Race Relations show that there are approximately 225 local community, 27 state, and 123 national organizations operating in the field of intergroup and related problems. Seventy-five of these national organizations deal specifically with race and intergroup problems. Most of these voluntary agencies have come into being since 1943 and represent "one of the most notable trends of the war years."

NEW TECHNIQUES

New adaptations have been made of the social survey in assisting communities to deal effectively with their problems in race and intergroup relations. Two of these adaptations come in for mention and during 1946 were receiving increased use as social tools. They are the Race Relations Clinic and the Community Self-Survey Analysis. Both of these devices, though with important differences as to length of time and technical direction, seek to have the community discover for themselves their own areas of social maladjustment and group tensions as a prelude to remedial social action. Race Relations Clinics have been developed under the auspices of the Race Relations Department of the Federal Council of Churches of Christ in America and have been conducted in more than 22 cities. The Community Self-Survey Analysis has been employed in the work of the Race Relations Division of the Institute of Social Sciences at Fisk University and has been carried out in four cities.

One of the areas of potential interracial strife is in the three-way relations between the police, minority groups, and the public. In recent months, several police departments in widely separated sections of the country have instituted training courses for the police in minority group relations. This program in police training has been directed by the American Council on Race Relations. Training programs have been conducted by the Council for departments in Richmond, Calif., Minneapolis, Youngstown and Dayton, O., and for the Rangers of the Cook County Forest Preserve. The Race Relations Division of the Julius Rosenwald Fund conducted a course in race relations for the police officers of the Chicago Park District.

JUDICIAL DECISIONS AFFECTING RACE CONDITIONS

There were at least ten important decisions by the Supreme Court of the United States and inferior Federal courts affecting the course of race relations. Three of them merit special citation. The most far-reaching was the decision handed down by the Supreme Court in the case of *Morgan vs. Commonwealth of Virginia.* A six to one decision by the court declared a Virginia statute requiring segregation in bus travel an undue burden on interstate commerce and contrary to the Constitution. This decision, while skirting the direct issue of racial equality, nevertheless outlawed Jim-Crow travel accommodations. The Morgan decision was based on a suit involving interstate travel on buses. A second court case extended the application of the decision to railroad coaches when the District Court of Appeals in the District of Columbia held that the Morgan decision was binding on railroad coaches in interstate commerce.

The third case was the decision of the Fifth Circuit Court of Appeals in upholding the decision of the Middle Georgia District Court that Negroes were entitled to vote in primary elections. These judicial determinations were in support of and extended the coverage of the Texas Primary Case which declared Negroes could not be barred from voting in the primary elections of that state.

AMERICAN INDIAN AFFAIRS

By D'ARCY MCNICKLE

OFFICE OF INDIAN AFFAIRS, DEPARTMENT OF THE INTERIOR

ADMINISTRATION REFORM

The task of modernizing the Office of Indian Affairs became the first concern of the new Commissioner, William A. Brophy, who succeeded John Collier in March of 1945. The Office, which has existed as a Federal agency since June 30, 1834, is charged with the administration of numerous statutes reflecting the will of Congress. These statutes are literally numbered in the thousands, many of which are no longer appropriate. In carrying out the statutory requirements, regulations numbering also in the thousands have been issued from time to time. Out of this mass of law and regulatory device, procedures and policies often emerge which seemingly have no rational justification; and equally often procedures or policies which would be desirable and efficient are precluded by underlying law.

Typical of the inefficiency resulting from the accumulation of years of such practices was the budget under which Indian affairs have been administered in recent years. This budget had come to be a collection of numerous appropriation items, each item having been well justified in its initial authorization. As years went by the item remained, and money was appropriated for the function it represented without regard to whether the function was longer needed or was needed in greater or lesser degree. Meantime other activities which should have been assumed could not be justified in the budget. This difficulty has now been corrected by reducing, with the consent of Congress, the number of appropriation items from approximately 100 to 28. The remaining items represent larger classifications with greater elasticity within each category.

Perhaps an even more important reform was the enactment by Congress, Aug. 8, 1946, of Public Law 687, authorizing the Secretary of the Interior to delegate to the Commissioner of Indian Affairs and the Commissioner in turn to delegate to field officials, authorities vested in the Secretary or the Commissioner by law. This had always been a stumbling block in any effort to decentralize the functions of the Indian Service. The statutes uniformly directed the Secretary or the Commissioner to perform certain duties, without leaving any discretion in these officers for delegating authority to employees stationed on the Indian Reservations in direct contact with the Indian people. This meant that few decisions were made locally, and enormous loads of paper work accumulated at central headquarters.

Immediately upon the passage of Public Law 687, five district offices were created, at Minneapolis, Billings, Mont., Portland, Ore., Phoenix, N. M., and Oklahoma City. To the officer in charge of each district office and also to the superintendents of the Indian reservations, authority was delegated for certain types of local decision.

THE RETURNING VETERAN

Indian veterans and war workers, numbering, respectively, 25,000 and 40,000, faced serious problems of adjustment. Indian incomes had been among the lowest in the nation before the war. Roughly 100,000 Indians had no land at all or had only small parcels of no economic value. Yet Indians have continued to be predominantly a rural people, dependent on land for subsistence. Although in the war year 1944 the income of individual Indians was about 2½ times that of 1938, it appeared nevertheless that one-third of the Indian families earned less than $500; two-thirds of all Indian families had less than $1,000. The same shortage of land and the same meagerness of economic opportunity exists, and as wartime wages and servicemen's allotments disappear, the Indians will presently return to their pre-war situation. The problem is most acute on the Navajo Reservation, where 55,000 Indians, the largest tribe in the United States, are living in an area which at present can not support more than half that number. There, the condition is particularly aggravated by the fact that the tribe is increasing at the rate of better than two per cent a year. With each year that passes, approximately 1,000 additional persons must be fed when there is not subsistence enough to feed those already there.

ECONOMIC ACTIVITIES

The principal source of income is agriculture, and cattle raising is the largest single activity. During the past year, sales from all agricultural products was in the neighborhood of $23,000,000, exclusive of $9,000,000 worth of products consumed at home. Of this total farm income, sales of livestock products amounted to $16,-

376,000. This farming economy is financed through a revolving credit fund authorized in 1934 and administered by the Office of Indian Affairs. At the present time loans totaling more than $10,000,000, including $3,529,898 made from tribal funds, are in force. Repayments totaling $3,279,640 have been made and reloaned to other clients. Out of this total, only $14,459 is currently past due, while only $2,746 has been written off as uncollectible.

EDUCATION AND HEALTH

The schools and hospitals operated by the Indian Office suffered during the war years for lack of personnel and through deterioration of plant and equipment. School attendance, which had fallen off heavily, has regained losses as rapidly as teaching staff and repairs of facilities would permit. Attendance at day schools during the year 1941-42 had been 25,839. This total has not yet been reached but presumably it will be reached and passed in the current year. In addition to day schools, Indian children are enrolled in boarding schools operating on the reservations and in boarding schools away from the reservations. The Indian Service operates 76 hospitals and sanatoriums with a total bed capacity of 4,080, which includes 1,244 beds for tuberculosis patients. Admissions numbered 39,582 patients, and, in addition, 921,123 out-patient treatments were given. The shortage of nurses was relieved somewhat by using Senior Cadets of the United States Cadet Nurses' Corps in some hospitals. The shortage of physicians continued to be a serious problem.

LEGISLATION

The most important single piece of legislation enacted in the field of Indian affairs in many years was the creation by Congress of an Indian Claims Commission. Indians had urged the creation of such a body for many years as a means of getting a fair and prompt hearing on claims growing out of broken treaty promises and inequitable treatment at the hands of the Government. Congress, in 1863, had declared by law that no Indian tribe could sue the United States as a result of breach of treaty without the consent of Congress. As a result of this action, Indian tribes having grievances were required to go first to Congress for a jurisdictional act, adoption of which was frequently delayed for terms as long as ten years. If the jurisdictional act was not broadly phrased, the Court of Claims frequently found that it could not entertain the type of claim presented by the tribe, and additional delays resulted.

The Indian Claims Commission Act of Aug. 13, 1946 requires all tribes to file their claims within a period of five years, and within a period of ten years from its creation the Commission must report a finding to Congress.

The outstanding Court decision affecting Indian affairs was that of the United States Supreme Court in the case of the Alcea Band of Tillamooks, *et al.* In this determination the Court held that original Indian title, even though not confirmed by formal treaty, is good against the United States as well as against third parties. While the Court was divided on the question of whether Congress had the constitutional power to confiscate Indian lands, it was unanimous in maintaining that, in the absence of Congressional action, administrative officials have no power to dispose of Indian possessions.

PERIODICAL PUBLICATIONS

American Journal of Sociology
University of Chicago, Chicago, Ill.

American Sociological Review
450 Ahnaip Street, Menasha, Wis.

Interpreter Releases
Common Council for American Unity, 20 W. 40th Street, New York City.

Milbank Memorial Fund Quarterly
40 Wall Street, New York City.

XIV. POPULATION AND MIGRATION

Population Index
Office of Population Research, Princeton University, Princeton, New Jersey.

Social Forces
University of North Carolina, Chapel Hill, N. C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Assn. on Indian Affairs, Inc., 48 East 86th Street, New York City.
American Colonization Society, 514-6 Colorado Bldg., Washington, D. C.
American Ethnological Society, Columbia University, New York City.
American Eugenics Society, Inc., 1790 Broadway, New York City.
American Jewish Committee, 386 Fourth Ave., New York City.
Ancient Order of Hibernians in America, 1648 Westmont Ave., Pittsburgh, Pa.
Birth Control Federation of America, Inc., The, 501 Madison Ave., New York City.
Common Council for American Unity, 20 W. 40th Street, New York City.
English-Speaking Union of the U. S., 19 E. 54th St., New York City.
Federation De L'Alliance Française, 22 E. 60th St., New York City.
Federation of Polish Jews in America, 225 W. 34th St., New York City.
Hebrew Sheltering and Immigrant Aid Society of America, 425 Lafayette St., New York City.
Holland Society of N. Y., 90 West St., New York City.
Huguenot Society of America, 122 E. 58th St., New York City.
Indian Rights Assn., Inc., 301 S. Seventeenth St., Philadelphia, Pa.
Inter-American Indian Institute, The, Londres 64, Mexico City, D.F.
Jewish National Workers' Alliance of America, 45 E. 17th Street, New York City.
Milbank Memorial Fund, 40 Wall St., New York City.
National Assn. for Advancement of Colored People, 20 W. 40th Street, New York City.
National Committee on Maternal Health, 2 E. 103rd St., New York City.
National Council of Jewish Women, 1819 Broadway, New York City.
National Indian Institute, Department of the Interior, Washington D. C.
National Jewish Welfare Board, 145 E. 32nd St., New York City.
National Urban League, 1133 Broadway, New York City.
Netherland-America Foundation Inc., 10 Rockefeller Plaza, New York City.
Planned Parenthood Federation of America, 501 Madison Ave., New York City.
Population Assn. of America, U. S Bureau of the Census, Washington D. C.
Population Research, Office of, 20 Nassau St., Princeton, N. J.
Scripps Foundation for the Study of Population, Miami University Oxford, O.
United States Bureau of the Census, Washington, D. C.
United States Immigration and Naturalization Service, Franklin Trust Building, Philadelphia 2, Pa
Young Judaea, Inc., 381 Fourth Ave. New York City.
Young Men's Hebrew Assn., Lexington Ave. and 92nd St., New York City.
Young Women's Hebrew Association, Lexington Ave., and 92nd St. New York City.
Zionist Organization of America 41 E. 42nd St., New York City.

DIVISION XV

SOCIAL PROBLEMS AND CONDITIONS

PUBLIC SOCIAL WORK AND WELFARE

By Howard L. Russell
American Public Welfare Association

GENERAL

The first full post-war year of 1946 saw public welfare agencies coping with social problems resulting from industrial reconversion, the return of millions of veterans, widespread strikes, and inflationary trends in living costs.

Nationwide social insurance programs were subjected to the first major test in their ten-year history. They served as an effective cushion in national reconversion from a wartime economy as did the national program of veterans' benefits in assisting the readjustment of discharged servicemen to civilian life.

During the year, welfare administrators found assistance rolls rising because many persons of marginal employability were pushed out of the labor pool by the increasing availability of employable veterans. This increase in persons needing public aid was less dramatic than expected. largely owing to the cushioning effect of wartime savings plus benefits available through the social insurance and veterans' programs.

The most difficult task of public welfare administrators was to keep assistance grants abreast of constantly rising living costs. Handicapped persons dependent on public aid for the basic necessities of life are affected the most by inflationary trends and particularly hard hit by rising food costs, since food represents a higher proportion of the total budget of assistance families than of any other population group.

At the end of 1946, public welfare agencies were generally facing financial deficits and seeking supplementary appropriations. Additional Federal funds for the aged, the blind, and dependent children, made available in October by the 79th Congress, provided substantial help to state and local welfare programs in meeting the obvious need for greater adequacy in public aid grants.

Equally significant during this year was the increased demand on public welfare agencies for help other than financial aid in treating social problems related to lack of housing or crowded quarters, dependent and neglected children, lack of medical care, and family maladjustments. The need to provide social services served to emphasize the long continued shortage of trained and qualified social workers in the public welfare field.

FEDERAL LEGISLATION

Each year of the war saw an increasing number of proposals for Federal welfare legislation, but because of the absorption of Congressional committees with the conduct of the war, few of these proposals were enacted into law. In 1946, however, Congressional committees turned to serious consideration of such proposals and a few important welfare laws were passed.

The House Appropriations Committee produced the Calhoun Report providing substantial background data on social security and public assistance. Lack of time prevented comprehensive treatment of proposals in this field, but Public Law 719 was enacted which increased Federal financial participation in public assistance for the aged, blind, and dependent children; provided unemployment compensation for maritime workers; gave retroactive coverage to veterans under the old age and survivors insurance program; and doubled previous appropriations to the Children's Bureau for its maternal and child health, crippled children, and child welfare programs.

The 79th Congress also enacted two important health measures. The Hospital Construction Act authorized $3.000,000 annually for planning and $75,000,000 annually for construction of needed hospital facilities in the form of grants-in-aid to the states. Another law authorized the establishment of a National Institute of Mental Health.

The appropriation bill for the Federal Security Agency contained provisions for continuing the Civilian War Assistance program for another year for the purpose of providing temporary aid and transportation for American citizens and their children returned from areas of military operation to this country and for the return to the Philippine Islands of civilians evacuated during the war years.

Other action taken by this Congress of interest to public welfare included that of returning the public employment offices to state jurisdiction. liberalizing the provisions of the Railroad Retirement Act, extending terminal pay in U. S. bonds to enlisted men, extending aid through the Federal Works Agency for the construction of facilities to educational institutions serving veterans, extending and modifying the Price Control Act, and providing for the reorganization of Congress.

INTEGRATION OF FEDERAL WELFARE FUNCTIONS

One of the most important governmental accomplishments in relation to public welfare came about through executive order. The President's Reorganization Plan No. 2, among other acts, abolished the Social Security Board, transferring its functions to the Federal Security Administrator and transferred the Children's Bureau from the Department of Labor to the Social Security Administration. This integration of Federal welfare functions hold promise of increased effectiveness in many of the public welfare services.

STATE LEGISLATION

New York.—Comparatively few state legislatures were convened during 1946 but those which did meet enacted important public welfare laws including many laws affecting the status and rights of veterans. New York enacted into law the major recommendations of its Special Committee on Social Welfare which for two years had been studying the "patchwork" quality of welfare functions accumulated through years of piecemeal legislation. The legislature sought three major objectives. First, the integration of services to the needy, including provision for a single office in which the needy might apply for all types of public assistance and care, investigation of family needs by a single agency, and uniform standards of assistance and care within any individual county. Second, the substitution of a residence requirement for the current cumbersome and costly settlement system. Third, the stabilization of state aid to local districts for support of welfare expenses and administration. Localities were required to choose one of four major options in reorganizing their welfare services and to receive the financial benefits provided in the law.

New York's legislature also authorized a comprehensive, two-part, public health program. One part dealt with a master plan for a statewide attack on tuberculosis and the other part strengthened local health activities. Other New York laws provided important changes and improvements in the state's child welfare and mental hygiene programs.

California.—The State Department of Mental Hygiene received, in 1946, the largest appropriation in its history for construction of new facilities. California also enacted sickness and disability legislation to benefit unemployed persons and followed New York in authorizing the continuance of day care centers for working mothers from which Federal support had been withdrawn.

Mississippi allocated most of the state's surplus funds to new welfare institutions and improvement of existing ones and its legislature materially strengthened both its public assistance and child welfare programs.

Georgia.—The legislature in a short 15-day session passed far-reaching social legislation that expanded its child welfare, public assistance, and recreation programs, and made new advances in public health. It passed a new child labor law which raises the minimum age for employment of children in certain industries from 14 to 16 years.

New Jersey in 1946 enacted over 60 laws on behalf of veterans and for strengthening programs concerned with education, employment, loans and civil service status. The legislature also gave the Juvenile and Domestic Relations Court exclusive jurisdiction over minors under the age of 18 and improved the administration of welfare services by consolidating the office of Overseer of the Poor with that of the Municipal Director of Welfare.

Ohio enacted laws that provided increased benefits for needy aged and blind persons and authorized increases also in grants under the Aid to Dependent Children program. At the August special session, the General Assembly provided that inmates of County Homes over 65 years of age could be eligible for public assistance at state expense. Illinois passed a similar law in 1945 and the experience under these laws is being watched by many states who desire to provide more and better institutional care for their aged population.

Virginia strengthened its adoption laws in 1946 and provided new financial support for its Juvenile and Domestic Relations Courts. Virginia also authorized its Department of Public Welfare to develop a statewide system of public homes for the care of the chronically ill, infirm, and incapacitated in need of institutionalization. (See "State Administration and Legislation," p. 178.)

LOCAL PUBLIC WELFARE

Local public welfare agencies, during 1946, felt the impact of increasing applications for aid for the first time since pre-war years, and available funds were strained by the need to increase individual grants to offset rising living costs. With inflexible tax sources, local governments faced with rising welfare costs generally turn to state and Federal governments for financial aid. The year 1946 was no exception in this regard for there was a definite trend in welfare financing to look toward the larger governmental units to assume the increased costs of public aid. This trend in financing is not accompanied, however, by any desire further to centralize welfare administration at the state or Federal level.

The year being marked with large-scale labor strikes, the question of eligibility of strikers for public aid concerned many local welfare agencies. The City of Detroit, anticipating the problem, worked out its policies and procedures with the help of a citizens' advisory committee and successfully applied them during 1946. Few local agencies found it necessary, however, to assist the families of strikers in very large numbers.

PUBLIC ASSISTANCE

The downward trend of public assistance caseloads which prevailed throughout the war years was reversed during 1946, and all types of public aid showed increases both in the number of persons aided and in public funds expended.

The entry of the United States into the Second World War saw few employable persons receiving public aid, but the increasing demands for manpower from war plants drew many aged persons, mothers of small children, and other persons of marginal employability into the labor market from the assistance rolls. Late in 1945, with the reconversion of wartime industry to a peacetime basis, the persons of marginal employability were displaced, and many found themselves again in need of assistance.

In September 1946, 282,000 general assistance cases were being aided throughout the country. This represented an increase of 21.6 per cent over the previous year, while the month's expenditure of $9,796,000 represented an increase of 42.2 per cent in the same period. For this type of assistance, the expenditures represent state and local funds only as in contrast to assistance to the aged, the blind, and dependent children, the cost of which is shared by the Federal Government.

Old age assistance, aiding 2,134,585 persons in September 1946, rose 4.9 per cent over the number aided a year previous. Expenditures for old age assistance were $68,635,000 an increase of 11.8 per cent over the corresponding September of 1945.

The 75,274 blind persons receiving aid in September 1946 in the amount of $2,605,000 represented an increase of 6.5 per cent in the number of persons and 13.1 per cent in expenditures over the previous year.

In September 1946, public aid on behalf of dependent children was given to 323,360 families, including 829,309 children at a cost of $17,918,209. This represented an increase of 26.1 per cent in the number of children and 41.6 per cent in the expenditures over a year previous.

It is to be noted that the 1946 per cent increase in expenditures for all types of public aid doubled the per cent increase of the caseload. This reflects the efforts made to keep assistance grants abreast of rising living costs.

SOCIAL INSURANCE PROGRAMS

The operations of the federally administered program of old age and survivors insurance and the state-administered programs of unemployment compensation are importantly related to public welfare in their assumption of an increasing role in meeting economic need.

At the end of September 1946, almost 1,600,000 monthly benefits were in current-payment status at a monthly rate of $29,800,000 through the old age and survivors insurance program. This represents a substantial increase over the 1,180,000 benefits at the monthly rate of $21,650,000 in effect during September 1945.

Since unemployment compensation began paying benefits in 1936, more than $3,500,000 have been paid out to persons temporarily unemployed, and in September 1946, the reserves accumulated for this program amounted to $6,790,000,000. In this month $63,200,000 was paid out to an average weekly number of 839,000 beneficiaries.

The availability of social insurance benefits has an appreciable effect on reducing the demands for public aid which would otherwise have been made on the public welfare agencies.

CHILD WELFARE

Congress, during 1946, gave a decided impetus to the provision of nationwide child welfare services by doubling previous Federal appropriations for the Children's Bureau's programs for maternal and child health, crippled children, and child welfare. These Federal funds are made available to state and local agencies to supplement their own programs and to make services to children more widely available.

Services on behalf of children that are considered essential in every community include the protection of children in their own homes; the arrangement of care for children outside their own homes where necessary; the finding of and securing attention for children who are physically or mentally handicapped; safeguarding children of illegitimate birth; service to courts handling problems of child custody or juvenile delinquency; assistance to child-caring institutions in problems of admission and after-care services; extending psychiatric or other casework services to children in connection with mental hygiene clinics; assisting schools in handling attendance and conduct problems; and organizing community activities for the prevention of juvenile delinquency.

The problem of providing such community services is not financial alone. Approximately five out of six counties in the nation do not now have the services of a full-time child welfare worker. Since the shortage of professional workers in this field continues to be a major problem, public funds will be used in many agencies for the training of personnel.

The emergency Maternity and Infant Care program under which, during the war, servicemen's wives and babies received free medical, hospital and nursing care has been continued by Congress for another year.

In doubling the usual appropriations for child welfare services, Congress acted on testimony relating to the need of state and community services. Some 4,000,000 children in the country have lost one or both parents; at least 60,000 of these are children of men who died in the last war. Nearly 1,000,000 children come to the attention of the police each year; 250,000 of them are in serious enough trouble to reach the juvenile courts. Eighty thousand children are born each year to unmarried mothers, at least half of whom are little more than children themselves, under 20 years of age. A quarter of a million dependent and neglected children are in institutions; many thousands are in need of foster home care. Many children lack supervision and guidance because their mothers are employed or are ill or for other reasons. In 1944, 2,770,000 mothers of children under 14 years were employed, most of them because of economic necessity. Specialized services to meet social problems involving children, though widely recognized as necessary, are not yet generally available throughout the country.

INSTITUTIONAL CARE FOR THE AGED

During 1946, public welfare administrators sought more and better facilities for aged people who can not take care of themselves. Hospitals, convalescent homes, infirmaries for the chronically ill, nursing homes, and homes for the aged are generally crowded, substandard, and in some communities lacking entirely.

Long-term trends, indicating continued population movement toward urban centers, housing shortages, and an increasing percentage of the population in the aged group account for the increasing number of persons in need of some degree of custodial, medical, or hospital care.

The passage of the Federal Hospital Construction Act in 1946 will provide stimulation through financial support of state and local hospital facilities. Several states, including Illinois and Ohio, have passed enabling legislation, promoting the conversion of suitable poor farm facilities into modern infirmaries. Many states are currently reviewing their licensing laws as a medium for raising standards in convalescent and nursing homes. In spite of a prohibition in the Federal Security Act preventing the granting of public assistance to inmates of public institutions, some states are authorizing state and Federal funds for this purpose.

Local governments in most states bear almost the whole public cost of hospital care for the chronically ill, custodial care for the disabled and handicapped, domiciliary care for those who choose to live in institutions, and institutional care for dependent and neglected children. In the greater part of the country, the county is the local unit which provides this institutional care. These governments are the least able financially to bear the cost of the needed improvements and extension of institutional care. In the past year there was a trend in the direction of having state and Federal governments assume a greater share of the total cost of institutional care.

CONCLUSION

The year 1946 witnessed a reversal of the wartime downward trend in public dependency. Requests to legislative bodies for larger appropriations to meet rising costs of public welfare will undoubtedly tend to focus attention more sharply on the organization and administration of public welfare in order to seek greater value for the welfare dollar. The responsibility which government has assumed for handicapped indigent citizens will continue to require large expenditures of public funds provided by local, state, and Federal governments.

HOUSING

By Howard F. Vickery
Director of Information, National Housing Agency

VETERANS EMERGENCY HOUSING PROGRAM

Housing activities during 1946 were centered on providing shelter for returning war veterans. Home building was carried on under the Veterans Emergency Housing Program, with the Housing Expediter in charge, utilizing the facilities and staff of the National Housing Agency.

The National Housing Agency was created by executive order of the President on Feb. 24, 1942, to centralize non-farm housing responsibilities formerly assigned to more than a dozen agencies. Policy decisions are made in the office of the Administrator and operations are carried out through three major constituent units: Federal Home Loan Bank Administration, Federal Housing Administration, and Federal Public Housing Authority.

To launch a full-scale attack upon the veterans' housing emergency, the Office of the Housing Expediter was created by Executive Order 9686 on Jan. 26, 1946. Under the Housing Expediter, who was also appointed Administrator of the National Housing Agency 11 days later, the Veterans Emergency Housing Program was launched on Feb. 8. By Dec. 1, 1946, the home construction record of the Veterans Emergency Housing Program for the first 11 months of 1946 showed as follows:

Total Units Begun in Eleven Months		950,200
New Permanents	633,600	
Conversions	55,200	
Trailers	41,900	
Temporaries	193,500	
Other Public Bodies and Schools	26,000	
Total Units Completed in Eleven Months		584,300
New Permanents	395,800	
Conversions	54,700	
Trailers	41,900	
Temporaries	83,300	
Other Public Bodies and Schools	8,600	

It was apparent that the total number of housing units of all types put under construction during the full year of 1946 would reach the 1,000,000 mark, with all the original volume goal of the program substantially achieved or exceeded, except that for factory-built houses.

NHA was well-equipped, in organization and experience, to carry out the Veterans Emergency Housing Program. It had administered, from 1940-45, a war housing program in which more than 2,000,000 dwelling units were put under construction, all but about five per cent being completed by V-J Day. More than 700,000 additional units were built outside the program, most of them before 1942, when government housing regulations went into effect. Private investment supplied more than 1,000,000 units of war housing with a private investment of nearly $5,000,000,000.

This was enough to keep a core of the building industry active to meet imperative needs and in stand-by condition for the post-war job to come.

LIFTING OF CONTROL

On Oct. 15, 1945—two months after the war ended—WPB Order L-41, the war measure which restricted non-residential construction and limited residential building to quotas established by the National Housing Agency, was lifted, and sales price ceilings and priorities for materials were abolished. The result was a boom in non-residential construction, chiefly at the expense of home building. War-curtailed building materials producers and distributors were not yet ready to meet the tremendous demand. Many home builders found themselves unable to compete for scarce materials against commercial and industrial builders. Residential construction declined accordingly.

HOUSING EMERGENCY

Meanwhile, the nation's long-standing housing shortage became a housing emergency. As of Oct. 1, 1945, 1,200,000 families were living doubled up with other families. More men were leaving the armed forces in one month than the largest number of houses America had ever built in one year. Vacancy rates in most cities and towns had dropped to all time lows. It was estimated that something near 3,000,000 new dwelling units would be needed by the end of 1947 just to keep the shortage from getting worse.

On Dec. 31, 1945, Title V of the Lanham Act was amended to provide $191,900,000 to aid in providing re-use war housing to communities and educational institutions for veterans' accommodations. An additional sum of $253,727,000 was appropriated under the same act on April 9.

PRIORITY RATINGS

With the plight of homebuilders steadily growing worse, the Government began to restore controls over housing at the turn of the new year. The Civilian Production Administration issued Priority Regulation 33 on Jan. 15, 1946; this established a priority system ("HH priorities") covering 11 critical materials applicable to the construction of veterans' housing costing $10,000 or less or renting for $80 or less a month per unit. Subsequent amendments raised the number of building materials under HH priority ratings to include almost every type of scarce material.

PROGRAM OF HOUSING EXPEDITER

To coordinate these individual approaches to the housing emergency, and to overcome the veterans' emergency housing problem, the Office of the Housing Expediter was established. The Housing Expediter was authorized to formulate plans and programs to provide for an increased supply of housing for veterans of the Second World War, coordinate the activities of other executive agencies to carry out such plans and programs, recommend needed legislation to the President, and consult and cooperate with other national and local agencies, organizations, and industries to solve the housing emergency. On Feb. 7, 1946 the Housing Expediter submitted the Veterans Emergency Housing Program to the President, who approved it the following day.

The program set up a target—2,700,000 moderately-priced homes and apartments for veterans under construction by the end of 1947. It mapped out a campaign—stimulation of building materials production; limitation on the prices and rents to be charged for new houses; sales and rental preference for veterans, servicemen, and non-veteran hardship cases; cutting down of deferrable non-residential construction; priorities and allocations of scarce materials and equipment to home builders; channeling the bulk of building materials to moderately priced housing; construction of some 200,000 temporary housing units with funds authorized by Congress; recruitment of 1,500,000 additional workers; organizing community action programs.

The Veterans Emergency Housing Program as thus conceived, was by far the most ambitious home-building program ever undertaken. It called for building, in 1946 alone, three and one-half times as many homes as were built in 1945; building 70 per cent more in 1947 than in 1946; increasing production at a rate in 1946 that took five years to achieve from 1920 to 1925, the year of peak housing production.

The first order issued under the new program was Veterans Emergency Housing Program Order 1, on March 26, 1946. It called for deferment of new, unessential, non-residential construction to ease the strain on the many critically short building materials and thus make more of them available for veterans' housing, restricted all new housing to that covered by priorities at $10,000 or less, and required authorization to start any major construction work.

To aid construction of both rental units and moderately priced housing. a channeling order was issued on April 21, requiring 25 per cent of all HH authorizations reserved for rental housing, and 50 per cent of both rental and sales construction to be priced at or below local dividing lines. These dividing lines are based on the local current cost of producing a minimum acceptable two-bedroom house, as determined by FHA standards.

LUMBER SUPPLY PROBLEM

To break one of the building industry's chief bottlenecks—lumber—the National Housing Agency reached an agreement with the Department of Agriculture on May 16 to (1) build access roads to hitherto inaccessible government timber stands and thus increase our lumber supply, (2) obtain Forest Service preference for bidders for national forest timber whose output would result in maximum production of materials needed for the Veterans Emergency Housing Program, and (3) overcut timber beyond normal yield for an emergency period in certain localities of the South and West.

PROVISIONS OF THE HOUSING ACT

The Veterans Emergency Housing Act, passed by Congress on May 22, reaffirmed the powers granted the Housing Expediter by the President. It (1) authorized $400,000,000 for premium payments to stimulate production of critically-needed materials; (2) restored Title VI of the National Housing Act to operation by adding $1,000,000,000 to the amount of home mortgage loans made by private lending institutions which the Federal Housing Administration may insure under this Title, while permitting the Federal Housing Administration to insure mortgage loans up to 90 per cent of the "necessary current cost" on the property involved, including land; (3) authorized the Housing Expediter to guarantee markets for prefabricated houses and new types of materials; (4) provided $15,000,000 for the building of access roads; (5) permitted the sum of $5,400 for a mortgage loan on a single-family house, with a provision that it could be raised to $8,100; (6) ordered preference on all new construction built with FHA-insured mortgages under Title VI occupancy to be given to veterans and servicemen; and (7) authorized the Housing Expediter to control exports of housing materials.

PREMIUM PAYMENT PLANS

The first premium payment plan authorized under the Veterans Emergency Housing Act became effective June 1. It set up a system of incentive payments to manufacturers of structural clay products, one of the most critically short building materials; under it producers would be paid $5 for each 1,000 standard brick equivalents manufactured over established quotas. By Nov. 1, 16 premium payment plans were in effect, covering the major critical building materials.

OTHER SUPPLY PROBLEMS

By mid-year it was apparent that authorized non-residential construction was draining an undue amount of critical building materials away from home building. At the request of the Housing Expediter, the Civilian Production Administration ordered its field offices on May 30 to reduce the dollar value of non-housing construction authorizations by two-thirds for at least the next 45 days to keep building in line with materials supply. Permitted non-housing construction was subsequently curtailed twice.

July, August, and September saw further amplification of the Veterans Emergency Housing Program. In July, 26 Army and Navy installations were turned over to the program through the War Assets Administration, 21 materials were ordered set-aside for housing, Army and Navy nail supplies were drawn upon to supply home builders, and super-HH priorities were established for a 30-day period to rush completion of 100,000 temporary housing units during the next three months.

The major action of August was the announcement of the "big push" to get more materials into veterans' housing, so that more homes could be completed before winter set in and more new home construction get under way. The "push" consisted of (1) setting-aside a much greater proportion of scarce building supplies for housing; (2) adding many critical building items to the list of materials under priority control; (3) obtaining stricter compliance by closer inspection of the sale of building materials, and (4) cutting the volume of non-housing construction sharply with a more rigorous review of the essentiality of such construction. "Set-asides" were increased to make it possible for priority holders to obtain needed building materials more rapidly. This was done not only by increasing the proportion of material which must be held by dealers for priority orders, but also by requiring the dealer to hold this material until a priority order was presented. Heretofore the dealer had been required to "set-aside" this material for only 21 to 30 days for priority orders, after which time he could sell to any purchaser.

Further actions were taken during October to speed up the flow of materials to veterans' housing. More building materials were placed under priority ratings and more were ordered "set-aside." In addition, guaranteed markets were signed with three firms producing prefabricated housing. A fourth was signed in November, with several others pending.

ACCELERATION OF THE VETERANS PROGRAM

By Dec. 1, a recapitulation of the results of actions taken by the Veterans Emergency Housing Program showed both a sharp increase in building materials and a near record-breaking rate of homebuilding. While the obstacles encountered by the program—work stoppages in basic industries, the time required to obtain needed legislation, uncertainties about the fate of price control during crucial early stages of the program and failure of prefabricated housing to meet anticipated production goals—made it clear that the original goal of 1,200,000 homes and apartments under construction by the end of 1946 would not be reached, the record was impressive.

The record showed not only 950,200 dwelling units started and 584,300 completed, but also sharp increases in building materials production: monthly lumber output in October was 3,400,000,000 board feet—more than in any preceding month of 1946 except the peak month of August; November production of practically all plumbing fixtures set new all-time records. Average daily production of cast iron soil pipe and warm-air furnaces stood at the high levels established in October. Many of these production increases were owing to such government aids as materials allocation, price adjustments (over 250 in 1946), priorities assistance for raw materials and equipment, and premium payment plans. Over 700 Mayors' Emergency Housing Committees had been organized to plan and direct all phases of the local attack on community housing problems.

Thus, by the end of November, homebuilding had risen from the low wartime level to one of the highest levels in 20 years. Production of most building materials jumped to record or near-record levels and ranged from 50 to 100 per cent higher than during the early months of 1946. Even the removal of price controls on building materials on Nov. 4 was less serious than it would have been without such production in nearly every field of building materials.

REVISION OF THE VETERANS HOUSING PROGRAM

During December the Veterans Emergency Housing Program underwent considerable revision. The Office of the Housing Expediter and that of the Administrator of the NHA were separated. Several restrictions were lifted: the priority system, the $10,000 sales ceiling on new homes, and the confining of new homebuilding for personal occupancy of veterans. The limitation on non-residential construction was modified, and the ceiling of $80 for rental of new projects was changed to an average monthly rental of $80. The Federal Housing Administration was granted $1,000,000,000 additional of insurance authorization to be used primarily for rental housing. The guaranteed market plan, export controls, and apprentice training and technical research programs were to be continued. In announcing the new program, the President stated that the main point of emphasis in 1947 would be rental housing.

FEDERAL HOME LOAN BANK ADMINISTRATION

The Federal Home Loan Bank Administration directs the operations of the Federal Home Loan Bank System and the Federal Savings and Loan Insurance Corporation, two permanent agencies established to encourage home ownership and economical home financing and to protect savings. The Administration supervises Federal savings and loan associations. FHLBA also directs the Home Owners' Loan Corporation, an emergency agency founded during the depression to aid distressed home owners who faced foreclosure. HOLC is now in liquidation.

FEDERAL HOME LOAN BANK SYSTEM

Established in 1932, the Federal Home Loan Bank System provides a nationwide home-mortgage credit reserve for thrift and home-financing institutions somewhat comparable to the Federal Reserve System in the field of commercial banking. Eleven regional Federal Home Loan Banks serve member home-financing institutions in their respective areas by making short-term and long-term loans to them. Through the regional banks, funds may be shifted from areas of abundant credit to areas of scarcity. Since their establishment, they have advanced $1,872,000,000 to their member institutions, of which $234,762,000 was outstanding on Sept. 30, 1946.

Of the 3,702 member institutions of the System, 3,665 are savings and loan associations, cooperative banks, and homestead associations. Of the remaining member institutions, 25 are mutual savings banks and 12 are insurance companies. Assets of members amount to more than $9,696,000,000. The System is self-supporting.

FEDERAL SAVINGS AND LOAN ASSOCIATIONS

Under a law enacted in 1933, the Federal Home Loan Bank Administration is authorized to charter and supervise Federal savings and loan associations, which are private mutual savings and home financing institutions. Charters may be granted to newly organized institutions or those converting from state charter. On Sept. 30, 1946, there were 1,474 such associations in operation with combined assets of $4,470,000,000. Federal associations are required to be member institutions of the Federal Home Loan Bank System and must be insured through the Federal Savings and Loan Insurance Corporation.

FEDERAL SAVINGS AND LOAN INSURANCE CORPORATION

In 1934 Congress provided an insurance program for investors in savings and loan associations and similar home-financing institutions by creating the Federal Savings and Loan Insurance Corporation. Insurance is optional for state-chartered associations. Public confidence, inspired by the fact that investments are so safeguarded, has encouraged the flow of funds into insured associations. About 4,751,000 investors in 2,497 savings and loan associations, with combined assets of more than $7,012,000,000, are now protected by insurance up to $5,000 each. The FSLIC is self-supporting.

HOME OWNERS' LOAN CORPORATION

During the three years after its creation in 1933, the HOLC refinanced delinquent mortgages on more than 1,000,000 homes by providing low-interest long-term loans, which since then have enabled most of the owners to retain their homes. In these rescue operations, $3,093,000,000 was loaned, an amount later increased to nearly $3,500,000,000 through advances to borrowers and other costs.

Up to Oct. 31, 1946, about 81 per cent of this investment had been liquidated by collections on the loans and the sale of properties securing its mortgages which HOLC was obliged to foreclose. A balance of $666,000,000 was outstanding on that date.

Since 1936 the primary functions of the Corporation have been to collect payments due and liquidate its assets, as well as to aid its borrowers to meet their payments. Although the agency acquired a total of 198,189 houses, all but 144 have been sold. Most of them were marketed before the outbreak of the war and the ensuing boom in real estate values.

On Oct. 31, 1946, the remaining number of borrowers' accounts had been reduced to 399,875. About 604,000 borrowers and purchasers of HOLC houses had paid off their mortgage balances in full.

During the 12 months ended Oct. 31, HOLC made a net operating profit of $23,000,000 after paying all administrative and other costs, plus bond interest. The cumulative losses of $338,000,000 taken by the Corporation in the sale of houses it was obliged to foreclose over the years of its operations had been reduced by net earnings to a balance of $28,000,000 on Oct. 31.

It is now apparent that, when liquidation is completed, the Corporation will be able to pay back to the U. S. Treasury its $200,000,000 of original capital intact, plus a moderate return. Probable losses ranging up to $1,000,000,000 had been widely forecast when the Corporation was set up in 1933 to aid insolvent home owners, relieve distressed financial institutions of defaulted loans, and restore deflated real estate and mortgage values.

FEDERAL HOUSING ADMINISTRATION

The Federal Housing Administration was established in June, 1934, by the National Housing Act "to encourage improvement in housing standards and conditions, to create a sound mortgage market, and to provide a system of mutual mortgage insurance."

Under the Veterans Emergency Housing Program, the FHA is the operating constituent of the NHA which processes and issues priorities on materials for housing for veterans. It also insures home loans which meet FHA conditions.

The FHA does not lend money but insures residential mortgage loans made by private lending institutions and also insures lenders on property improvement loans. The maximum interest rate, under Title II of the National Housing Act, is 4½ per cent plus the FHA insurance premium of ½ of 1 per cent, both calculated on annual outstanding balances.

In peacetime, FHA insurance normally is governed by Titles I and II of the National Housing Act. Title VI was added as a defense war measure.

Title I provides for FHA insurance of qualified financial institutions on loans for property improvements, alterations, and repairs. Although loans for those purposes ordinarily are limited to a maximum amount of $2,500 and a maximum term of three years, loans up to $5,000 for terms up to seven years are insurable if the funds go to provide additional housing accommodations for veterans. Title I loans are repayable in monthly installments.

Title II provides for insurance of mortgage loans ranging up to $16,000 made by approved lending institutions. All loans are amortized in monthly payments and under certain circumstances may be repaid over periods of as long as 25 years.

Title VI was added to the National Housing Act specifically to assist in providing housing for defense and war workers. A separate Housing Insurance Fund, non-mutual in character, was established. FHA temporarily stopped taking applications for Title VI loans in September 1945 when its authorization was virtually used up, but such insurance was resumed in May 1946 upon the approval of the Veterans Emergency Housing Act.

Mortgages insured under Title VI are limited to a maximum of $5,400 on a single family house; $7,500 on a two-family house; $9,500 on a three-family house; and $12,000 on a four-family house. Insured loans may cover up to 90 per cent of necessary current costs. In areas where builders can not provide sound standards of construction, design, or livability within these limits, the Federal Housing Commissioner may permit maximum mortgage amounts up to $8,100 on a single family house; $12,500 on a two-family house; $15.750 on a three-family house; and $18,000 on a four-family house.

Title VI authorizes FHA also to insure mortgages on large-scale rental projects for a maximum of 90 per cent of FHA cost estimates.

Before FHA resumed Title VI insurance in May, 1946, with a total insurance authorization of $1,800,000,000, it had insured loans for approximately 450,000 dwelling units for war workers. Amendments permit FHA to issue additional insurance up to $1,000,000,000 for housing for veterans and members of the armed forces. This may be increased with the approval of the President by an additional $1,000,000,000.

From July, 1940, up to the surrender of Japan, more than 750,000 new privately financed dwelling units went into construction under FHA inspection.

The long-term program of the FHA has enabled more than 1,760,000 families to build, purchase, or refinance their homes or to rent modern quarters. FHA insurance written under Title II amounted to more than $5,442,000,000 as of Nov. 30, 1946, and FHA insured property improvement loans under Title I exceeded 6,064,000 in number and aggregated $2,427,000,000.

In addition to being self-supporting, the FHA has been able, under the participation provisions of the Mutual Mortgage Insurance Fund, to declare on certain groups of mortgages 41,000 dividends through March 31, 1946. By Jan. 1, 1946, equity balances had accumulated in a total of 81 groups. Dividends will be received eventually by approximately 226,000 mortgagors who still remained in these groups on that date.

FEDERAL PUBLIC HOUSING AUTHORITY

The Federal Public Housing Authority has responsibility for federally financed public housing functions. At the beginning of 1946, the FPHA had four principal assignments:

1. To provide approximately 200,000 emergency temporary housing units for veterans, in cooperation with educational institutions and local bodies, by relocating and converting surplus war housing and military structures for re-use.

Completion of 200,000 temporary units is one of the goals of the Veterans Emergency Housing Program. Title V of the Lanham Act, as amended by the Mead-Lanham Resolutions of December 1945 and March 1946, authorized appropriations of $445,627,000 to pay the Federal cost of the re-use program. Approximately 180,000 units are expected to be moved and remodeled at Federal expense.

2. To provide Federal aids for low-rent housing built before the war or deferred because of the war and to convert war housing under the United States Housing Act to low-rent status.

Before the outbreak of war interrupted construction of public low-rent housing, local housing authorities in 173 communities built 334 projects containing 105,600 units for low-income families formerly living in slum dwellings. Projects are financed with loans from the FPHA or private investors; all loans are being repaid in full, with interest, in accordance with established amortization plans. To help keep rents within the means of low-income families, the FPHA makes an annual contribution, or subsidy, which for 1945 totaled $7,414,000 or $6.03 per dwelling unit per month. To Dec. 31, 1945, Federal subsidy payments totaled $46,790,040; this represents the entire cost to the Federal Government since the beginning of the low-rent program. In addition, the local community is required to make an annual contribution equivalent to at least one-fifth of the Federal contribution. This local contribution is made normally by exempting the projects from state and local taxes, as authorized by the United States Housing Act and state housing laws.

When the war began, only half of the program authorized under the United States Housing Act had been completed. Units under construction at that time were completed with the aid of priorities to house lower-income war workers and, after V-J Day, were turned back to full low-rent use. Additional war housing projects were built under Public Law 671, which authorized the use of low-rent housing funds for war housing construction. Early in 1946, after a Presidential finding that they were no longer needed to serve war needs, some 33,000 units in P. L. 671 projects were converted to low-rent status. Altogether, low-rent housing funds had provided 62,000 units for war workers. Some 21,000 low-rent units scheduled in areas not requiring more war housing were deferred, pending availability of building labor and materials. As of Nov. 1, 1946, the total housing built or authorized under the United States Housing Act comprised 193,643 dwellings in 747 projects.

3. To manage public war housing during the period of reconversion and demobilization for distressed families of veterans and servicemen, for certain civilian employees of the War and Navy Departments and of private industries completing war contracts, and for distressed families dislocated as a result of the war or demobilization.

The major wartime function of FPHA was to provide publicly financed housing for in-migrant war workers and their families; the FPHA was responsible for the construction and management of about four-fifths of the total provided. The remainder was provided by other agencies, principally the War and Navy Departments and the United States Maritime Commission. For the total public war housing program, some $2,500,000,000 was made available, all from Congressional appropriations or loan authorizations except $29,000,000 expended by the New York State Division of Housing.

From these funds some 856,000 accommodations were provided for in-migrant war workers and their families. All but 16,000 of these units had been completed by December 31, 1945. The war housing completed includes 590,000 family dwelling units, 169,000 dormitory units, and 81,000 trailers, portable shelters, and other forms of stop-gap housing. These figures include accommodations made available by re-use of trailers and temporary or demountable units that were moved from one location to another.

In addition to veterans accommodated by the relocation of surplus facilities, on Nov. 1, 1946, 272,000 veterans' and servicemen's families were living in public housing remaining at its wartime location. Such families accounted for over 44 per cent of all occupied war and low-rent housing units in programs administered by the FPHA.

4. To dispose of federally owned housing surplus to the above needs.

The FPHA on Nov. 1 had some 523,000 units completed or under construction contract to dispose of when surplus to veterans' and other demobilization needs. These include 244,000 temporary units, which must be removed within 2 years after the emergency; 184,000 permanent units, including 113,000 of standard construction, and 71,000 demountables which may be dismantled and reerected at new locations; 14,000 permanent family units, built with U. S. Housing Act funds and presently used as war housing, to be turned over to the use of low-income families; 35,000 trailers; and 46,000 family and dormitory units converted from existing structures, mostly under lease from private owners.

Other FPHA housing includes: (a) 50 projects built by PWA and operated as low-rent housing; (b) 30 subsistence homesteads projects, which were transferred from the Farm Security Administration and are being disposed of; (c) three Greenbelt towns which were transferred to FPHA in 1942 for management and eventual disposition; and (d) seven limited dividend projects constructed by private corporations with the aid of government loans. Mortgages on four have been sold, and the remaining three may also be sold.

PRISONS AND CRIME CONTROL

By James V. Bennett
Director, U. S. Bureau of Prisons

TRENDS IN PRISON POPULATION

The population of state and Federal prisons and reformatories decreased from 165,585 in 1940 to 127,076 in 1944, a decrease of 23 per cent. From 1944 to 1945, the inmate population had increased by only 795, but there are indications since that the substantial increase in prison commitments predicted for the post-war period may soon materialize. From Sept. 30, 1945 to Sept. 30, 1946, there was an increase of 6 per cent in the population of state institutions: there has been no such increase in Federal prisons despite the fact that about 1,000 prisoners were transferred from the armed forces. The population of Federal institutions stood at 18,170 at the end of September 1946 as compared with 18,962 in September 1945. This slight decrease can be accounted for mainly by the release of violators of special wartime laws, particularly the Selective Training and Service Act, of whom more than 11,000 have been committed since 1940. In December 1946, less than 1,500 remained in confinement. Of these, 455 were Jehovah's Witnesses and less than 50 were conscientious objectors.

This latter group petitioned during 1946 for release of selective service violators and specifically for amnesty for those with religious objections. By means of hunger fasts, picket lines, and even sit-down strikes, they brought their plea to public attention, but to date no amnesty has been issued.

ARMY AND NAVY CORRECTIONAL PROGRAMS

These two branches of the service continued to make progress in the field of enlightened treatment and rehabilitation of the offender in uniform. The number of men in Army custody dropped from the previous year's high of 35,800 to 13,900. While comparable Navy figures show a reduction from 16,100 to 8,800, of whom 1,400 were awaiting trial, the remainder being under sentence. These figures do not include a total of 3,913 in the custody of the Federal Bureau of Prisons, by transfer from military or naval installations. These long-term or serious offenders comprise 3,862 committed by the Army and 51 by the Navy.

Army and Navy correctional programs, staffed during the war by career persons drawn from civilian agencies, while now manned by regular Army and Navy personnel, nevertheless continue the high standards and the progressive programs initiated during the war years. The War Department has restored to active duty more than 24,000 court martial prisoners. The Special Clemency Boards set up by the Under Secretary of War reported they had reviewed a total of 28,400 sentences. With the completion of this work, all men still serving court martial sentences will have their cases reviewed annually. It is estimated that by 1950 less than 1,500 of these military offenders will continue in custody.

In December 1946, the Army opened its newest disciplinary installation at Camp Cooke, California. This institution, patterned after the Federal Penitentiary at Terre Haute, Indiana, and under the command of Col. J. W. Fraser who formerly headed the War Department Correction Division, will, it is hoped, ultimately supplant the old military prison at Fort Leavenworth now long outmoded.

The Navy announced a change in the names of its Naval Prisons at Portsmouth, New Hampshire, and Terminal Island, California, to Naval Disciplinary Barracks, in line with the rehabilitation being carried out at those two institutions. The War Department, in adopting a policy of parole supervision for men discharged before full expiration of sentence. gave a further indication of its acceptance of modern correctional standards, and integrated its program of treatment. Federal probation officers are expected to supervise Army parolees, as they now do parolees from Federal penal and correctional institutions.

STATE PENAL DEVELOPMENTS

Florida, Oregon, West Virginia, Louisiana, Washington, and Ohio made considerable progress in the evaluation of their entire penal programs. Florida will probably have a new women's institution and a new reformatory as a result of this survey, and West Virginia bids fair to reorganize entirely its system of institutions and county jails.

California, after five years' experience with the Youth Correction Authority Act, paused to appraise the effectiveness of its operation and to plan for further implementation of the provisions of this legislation. The Youth Correction Authority Act idea is the most hopeful forward step that has been taken in American criminal justice in the past decade. Of the many states which have in recent years looked into the provisions of this act, Minnesota is among the most recent. The Federal Corrections Act was again introduced with the hope that its passage would give prison administrators a greater opportunity to plan for the rehabilitation of the men entrusted to their care without the restrictions now imposed by the fixed sentences under which men are committed to Federal custody.

It was only 15 years ago that Congress enacted a bill under the provisions of which the judges, instead of committing directly to one institution, sentenced men generally to the custody of the Attorney General. At first this act met considerable opposition from some of the judges but this statute is now generally accepted and approved. Under it, sentenced prisoners are not sent to an institution by the court until their previous background has been studied and appraised and an estimate has been made of their likely response to one of the 27 institutions under the supervision of the Department of Justice. After further observation, the classification committee at the institution decides whether their needs would not be better served by transfer to another institution.

This same flexibility is the core of the English Criminal Justice Bill originally introduced in Parliament in 1939. Postponed because of the war, this bill will again be brought up for consideration as soon as some of the more important Labor Party proposals have been disposed of. American students and practitioners in the criminal justice field will await with interest the results of this significant new effort to integrate and rationalize the sentencing, treatment, and release of persons convicted of crime.

THE LOCAL JAIL

The local jail is a perennial topic of discussion and appraisal, and rightly so, because of the fundamental part which the county jail plays in the total picture of crime control and treatment. Like the local court, the largest proportion of offenders pass through the local jail, and their penal experience goes no further. All accused awaiting trial who can not make bond, some witnesses, many children, and too many alcoholics and prostitutes, for whom no other form of treatment has been devised, know the inside of the local jail.

Since the Federal Bureau of Prisons boards an average of between 3,000 and 4,000 prisoners annually in non-Federal jails, it has for many years maintained an inspection service for the purpose of approving those which come up to its standards and refusing to contract for the boarding of Federal prisoners in those which fall too far below it. To the end of the year, only 444 of the 3,127 county and city jails inspected since 1930 were fully approved for Federal use. This constitutes only 14 per cent, and of these, four-fifths rated less than 60 per cent on the scale used to appraise such matters as food, cleanliness, supervision, and safety. Eighty-two per cent of the jails inspected in the past 16 years rated less than 50 per cent on this scale; only 2 per cent rated 70 per cent or above.

The condition of jails generally in the year following the close of the Second World War provides little basis for optimism. Only 30 per cent of the jails inspected in 1946 appeared to have improved as compared with prior inspections, while 47 per cent appeared to be worse. The conclusion is inevitable that most local jails—institutions which lie completely within the administrative domain of sheriffs or other locally elected officials—continue to constitute a disgrace to our democracy. Deplorable jail conditions must be attributed in part to the indifference of the local citizenry where such conditions are allowed to continue. In this regard it is hoped that the recent wave of public interest and indignation following upon a series of articles in two popular magazines will go far to awaken the ordinary citizen to his responsibility in this connection. Until this public concern is reflected in standards far above what are commonly accepted by our communities, the jail will continue to be a national disgrace and a source of corruption at the very root of crime control, largely undoing all that may be attempted in the way either of crime prevention or of decent and humane treatment at the prison level.

JUVENILE DELINQUENCY

The office of the Attorney General has in recent years provided leadership in the field of crime control. Under Attorney General Mitchell, the Wickersham Commission explored the phenomenon of gangsterism and laid the foundations of a policy which resulted in the reduction of that menace to civil order. Homer Cummings, in 1934, called a conference to review the general picture of crime in the United States, and measures to be taken to meet it. Frank Murphy, as Attorney General in 1939, called the Conference on Release Procedures at a time when parole had fallen into disrepute because of attacks launched against it in high places.

It is quite in the order of things, therefore, for Attorney General Clark to have issued a countrywide call to a Conference for the Prevention and Control of Juvenile Delinquency. Meeting in Washington Nov. 20-23, the Conference for the first time made a well-rounded national presentation of the factors conducive to the development of delinquent careers and the measures which should be taken to correct them. It was the expressed intent of the delegates to pursue the problem further with regional and local conferences which will take up from where the national conference left off. The proceedings of the conference are awaited with great interest and may well prove to be the most important contribution to date to the literature in this field.

The indivisibility of the entire field of crime control is emphasized by the calling of this national assembly to consider the more effective prevention and treatment of criminal conduct. The conviction grows that the various local and state jurisdictions must integrate their programs on a national basis; recent mobility of population has demonstrated that state lines are no barrier to criminal behavior; that the state which does not effectively prevent crime or treat the offender within its borders has no sure guarantee that its laxity may not be matched by the indifference of another state. The boundaries of crime are national not statewide, and it may be expected that 1947 will see many signs of the acceptance of this fact.

INTERNATIONAL PENAL AFFAIRS

The chief development of note in this field was the revival of interest in the International Penal and Penitentiary Commission, with headquarters at Berne, Switzerland. This Commission was originally established through the efforts of an American penologist, Dr. Enoch Wines, in 1870, and it is therefore fitting that an American, Sanford Bates of New Jersey, now leads the organization as it heads into a period of constructive post-war activity. The Economic and Social Council took note of international penal affairs when it charged the newly created Social Commission to undertake, as one of its functions, responsibility for the development of an international program for the prevention and treatment of crime and criminals. The precise place of the International Penal and Penitentiary Commission under the United Nations is not yet determined as this is written, but there is ample assurance that some machinery will be developed which will make possible an interchange of ideas, information, and personnel among United Nations members as to progressive developments in the field.

The influence of the American viewpoint on penal affairs in occupied Germany and Japan seems to be growing. The Allied Control Commission for Germany accepted a set of basic penological principles to govern the administration of German prisons which was prepared by the American representative. These principles provided for more liberal treatment than characterizes the Continental systems. It abolishes, for instance, corporal punishment and enunciates the principle that prisoners should be permitted a certain amount of group recreation and exercise, contrary not only to the system that prevailed in Nazi Germany, but in some other European countries as well. The prisons of Japan are likewise under the supervision of an American penologist who is modernizing these institutions and bringing their methods in line with the program and philosophies of the Western nations.

PERIODICAL PUBLICATIONS

American Childhood
74 Park St., Springfield, Mass.

American Journal of Psychiatry
9 Rockefeller Plaza, New York City.

American Journal of Public Health
American Public Health Association, 1790 Broadway, New York 19, N. Y.

American Journal of Sociology
5750 Ellis Ave., Chicago, Ill.

American Sociological Review
U. S. Dept. of Agriculture, Washington, D. C.

American Sociologist
68 Faculty Exchange, Washington University, St. Louis, Mo.

Annals, The
American Academy of Political and Social Science, 3457 Walnut Street, Philadelphia.

Boy's Life
Boy Scouts of America, 2 Park Ave., New York City.

Child, The
Children's Bureau, United States Department of Labor, Washington 25, D. C.

Compass
American Association of Social Workers, 130 East 22 Street, New York 10, N. Y.

Family, The
Family Welfare Association of America, 122 East 22 Street, New York 10, N. Y.

Housing Yearbook
National Association of Housing Officials, 1313 East 60 Street, Chicago 37, Ill.

Journal of Home Economics
Mills Bldg., Washington, D. C.

Journal of Social Hygiene
1790 Broadway, New York City.

Mental Hygiene
National Committee for Mental Hygiene, 1790 Broadway, New York 19, N. Y.

Proceedings of the National Conference of Social Work
82 North High Street, Columbus 15, Ohio.

Public Welfare
American Public Welfare Association, 1313 East 60 Street, Chicago 37, Ill.

Social Forces
University of North Carolina, Chapel Hill, N. C.

Social Security Bulletin
Social Security Board, Federal Security Agency, 1825 H Street, N.W., Washington 25, D. C.

Social Service Review
University of Chicago, Chicago, Ill.

Social Studies
809-11 North 19th Street, Philadelphia.

Social Work Year Book
Russell Sage Foundation, 130 East 22 Street, New York 10, N. Y.

Survey Graphic
Survey Midmonthly, Survey Associates, Inc., 112 East 19 Street, New York 3, N. Y.

Yearbook
National Probation Association, 1790 Broadway, New York 19, N. Y.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

PUBLIC SOCIAL WORK AND WELFARE

AMERICAN PUBLIC WELFARE ASSOCIATION, 1313 East 60 Street, Chicago 37, Ill.

FEDERAL SECURITY AGENCY, Social Security Building, Washington 25, D. C.

PRIVATE SOCIAL WORK

AMERICAN ASSOCIATION OF SOCIAL WORKERS, 130 East 22 Street, New York 10, N. Y.

AMERICAN ASSOCIATION OF SCHOOLS OF SOCIAL WORK, 1313 East 60 Street, Chicago 37, Ill.

AMERICAN FEDERATION OF INTERNATIONAL INSTITUTES, 11 W. 42nd Street, New York 19, N. Y.

AMERICAN NATIONAL RED CROSS, 17th between D and E Streets, Washington 13, D. C.

CHILD WELFARE LEAGUE OF AMERICA, 130 East 22 Street, New York 10, N. Y.

COMMUNITY CHESTS AND COUNCILS, INC., 155 East 44 Street, New York 17, N. Y.

COUNCIL OF JEWISH FEDERATIONS AND WELFARE FUNDS, 165 West 46 Street, New York 19, N. Y.

FAMILY WELFARE ASSOCIATION OF AMERICA, 122 East 22 Street, New York 10, N. Y.

International Migration Service, American Branch, 122 East 22 Street, New York 10, N. Y.

National Board, Young Women's Christian Associations of the United States of America, 600 Lexington Avenue, New York 22, N. Y.

National Catholic Community Service, 350 Fifth Ave., New York City.

National Catholic Welfare Conference, 1312 Massachusetts Avenue, N.W., Washington 5, D. C.

National Conference of Catholic Charities, 1317 F Street, N.W., Washington 4, D. C.

National Conference of Jewish Social Welfare, 108 W. 43 Street, New York 19, N. Y.

National Conference of Social Work, 82 North High Street, Columbus 15, Ohio.

National Council, Young Men's Christian Associations of the United States of America, 347 Madison Avenue, New York 17, N. Y.

National Federation of Settlements, 147 Avenue B, New York 9, N. Y.

National Institute of Immigrant Welfare, 11 West 42 Street, New York City.

National Jewish Welfare Board, 145 East 32 Street, New York 16, N. Y.

National Publicity Council for Health and Welfare Services, 130 East 22 Street, New York 10, N. Y.

National Recreation Association, 315 Fourth Avenue, New York 10, N. Y.

National Refugee Service, 105 Nassau Street, New York 13, N. Y.

National Social Work Council, 1790 Broadway, New York 19, N. Y.

National Travelers Aid Association, 425 Fourth Avenue, New York 16, N. Y.

National War Fund, 46 Cedar Street, New York 5, N. Y.

Salvation Army, 120 West 14 Street, New York 11, N. Y.

United Seamen's Service, 39 Broadway, New York 6, N. Y.

HOUSING

National Association of Housing Officials, 1313 East 60 Street, Chicago 37, Ill.

National Housing Agency, Fourth St. & Independence Ave., S.W., Washington, D. C.

PRISONS AND CRIME CONTROL

American Bar Assn., 1140 N. Dearborn St., Chicago, Ill.

American Civil Liberties Union, 170 Fifth Ave., New York City.

American Council of Learned Societies, 1219 Sixteenth Street, N.W., Washington, D. C.

American Institute of Criminal Law and Criminology, 357 E. Chicago Ave., Chicago, Ill.

American Law Institute, 3400 Chestnut St., Philadelphia, Pa.

American Parole Association, 135 East 15 Street, New York 3, N. Y.

American Prison Association, 135 East 15 Street, New York 3, N. Y.

National Committee on Prisons and Prison Labor, 1108 Sixteenth Street, N.W., Washington 6, D. C.

National Jail Association, 135 East 15th Street, New York 3, N. Y.

National Probation Association, 1790 Broadway, New York 19, N. Y.

National Society of Penal Information Inc., 114 E. 30th St., New York City.

Osborne Association, 114 East 30 Street, New York 16, N. Y.

Society for the Prevention of Crime, 122 East 22 Street, New York 10, N. Y.

Women's Prison Assn., 110 Second Ave., New York City.

CHILD WELFARE

Boy Scouts of America, 2 Park Avenue, New York 16, N. Y.

Boys' Clubs of America, 381 Fourth Avenue, New York 16, N. Y.

Camp Fire Girls, Inc., 88 Lexington Avenue, New York 16, N. Y.

Child Welfare League of America, 130 East 22 Street, New York 10, N. Y.

Girl Scouts, 155 East 44 Street, New York 17, N. Y.

National Child Labor Committee, 419 Fourth Avenue, New York 16, N. Y.

National Society for Crippled Children of the United States of America, 314 Masonic Temple, Elyria, Ohio.

HEALTH

American Public Health Association, 1790 Broadway, New York 19, N. Y.

American Social Hygiene Association, 1790 Broadway, New York 19, N. Y.

National Committee for Mental Hygiene, 1790 Broadway, New York 19, N. Y.

National Health Council, 1790 Broadway, New York 19, N. Y.

National Organization for Public Health Nursing, 1790 Broadway, New York 19, N. Y.

National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.

National Tuberculosis Association, 1790 Broadway, New York 19, N. Y.

FOUNDATIONS

Carnegie Endowment for International Peace, 405 West 117th St., New York City.

Carnegie Foundation, The, 522 Fifth Ave., New York City.

Commonwealth Fund, 41 East 57 Street, New York 22, N. Y.

General Education Board, 49 West 49 Street, New York 20, N. Y.

Guggenheim Foundation, 551 Fifth Ave., New York City.

Hall of Fame for Great Americans, New York University, University Heights, New York City.

Milbank Memorial Fund, 40 Wall Street, New York 5, N. Y.

Moro Edůcational Foundation, 475 Fifth Ave., New York City.

Rockefeller Foundation, 49 West 4 Street, New York 20, N. Y.

Rockefeller Institute for Medica Research, York Ave. and 66th St. New York City.

Roosevelt Memorial Assn., 28 E 20th St., New York City.

Rosenwald Fund, 4901 Ellis Avenue Chicago 15, Ill.

Russell Sage Foundation, 130 Eas 22 Street, New York 10, N. Y.

Twentieth Century Fund, 330 Wes 42 Street, New York 18, N. Y.

Woodrow Wilson Foundation, The 45 E. 65 Street, New York City.

SOCIAL AGENCIES

American Assn. of Universit Women, 1634 I St., N.W., Washington, D. C.

American Nurses Assn., Inc., 179 Broadway, New York City.

American Woman's Assn., 111 E 48th St., New York City.

General Federation of Women' Clubs, 1734 N St., N.W., Washington, D. C.

Girls Service League of Americ 138 East 19th St., New York City

National Association of Wome Artists, 42 W. 57th St., New Yor City.

National Council of Women of th U. S., Inc., 501 Madison Ave., Ne York City.

National Federation of Busines and Professional Women's Clubs 1819 Broadway, New York City.

National League of Women Voters 726 Jackson Place, Washingto D. C.

Woman's Roosevelt Memorial Assn Roosevelt House, 28 E. 20th St New York City.

Women's Educational and Industrial Union, 264 Boylston St., Boston, Mass.

Women's Trade Union League, 24 Lexington Ave., New York City.

DIVISION XVI

LABOR AND LABOR LEGISLATION

LABOR CONDITIONS AND LEGISLATION

By Witt Bowden
Bureau of Labor Statistics, Department of Labor

GENERAL

An outstanding achievement of 1946 was the virtual completion of the return of war workers and the armed forces to peaceful pursuits. Monthly estimates of total unemployment ranged from 2,700,000 in March to 1,930,000 in November. Extremely large shifts in employment were made from munitions industries to the production of ordinary civilian goods and services and from war-industry centers to other communities. These shifts relieved but did not remove the pressure of civilian demand on supply. At the same time, the radical employment shifts gave rise to grave problems of readjustment of workers. These problems were aggravated by declines in earnings, rising prices, housing and other shortages, and the difficulties of transition from wartime stabilization by public agencies to voluntary collective bargaining and price determination.

Collective bargaining over wages broke down in several major industries, and the early months of the year were marked by exceptionally severe strikes. By a combination of work stoppages, peaceful collective bargaining, and the mediatory efforts of the Conciliation Service and fact-finding boards, extensive wage advances were obtained by midyear. In many employments, however, these increases were not sufficient to counteract reductions in weekly earnings owing to loss of high-wage jobs, overtime, and premium pay.

The lapse of price controls in July, adoption of radically modified controls, and final decontrol were accompanied by sharp increases in prices and also by advances in corporate profits and farm income. Workers in turn demanded a "second round" of wage increases, and either began negotiations or prepared for renewal of agreements with higher wage rates early in 1947. Prominent in the "second round" of demands was the attempt of the United Mine Workers to terminate the agreement of May 29, 1946 made with the Government after the mines were seized to end a strike, but the effort was suspended pending an appeal by the union from adverse court action.

Labor unions retained most of their wartime membership gains and collective-bargaining coverage but found themselves confronted by renewed demands for restrictive labor legislation, particularly to curb strikes. By the end of the year, there were no important work stoppages, and steps were being taken, particularly by the Labor-Management Advisory Committee formed by the Conciliation Service, to work out more effective procedures for the peaceful settlement of disputes on a voluntary basis.

EMPLOYMENT AND UNEMPLOYMENT

Outstanding in importance in the world of labor was the maintenance of employment at high levels. Throughout the reconversion period to the end of 1946, the largest reported volume of unemployment was the March estimate of 2,700,000. The estimate for November was 1,930,000. This record was achieved during the curtailment of Federal expenditures for war and defense activities from $8,246,000,000 in March 1945 to $1,100,000,000 in September 1946, a reduction accompanied by the rapid demobilization of the armed forces and the sharp curtailment of employment in war industries.

Unemployment was kept within unexpectedly moderate bounds partly as a result of the rapid recovery of civilian production. The peak of production and employment in many war industries was reached in 1944 and early in 1945, and reconversion thus began before the end of the war. Most of the nondurable-goods industries and service industries required no extensive reconversion work and began to expand while war industries were undergoing cutbacks. The number of women in the civilian labor force, at its peak of 20,080,000 in July 1945, was only 17,400,000 in July 1946. Large numbers of children and older persons who took wartime jobs also voluntarily withdrew from the labor market. Unexpectedly large numbers of veterans took advantage of the Government's offer of educational assistance or for other reasons deferred their quest of jobs. Sharp reductions in overtime hours of work below wartime levels also tended to restrain the rise in unemployment.

The extent of transition to peacetime production and employment is indicated broadly by estimates of employment in non-agricultural establishments. The number fell from 37,273,000 in July 1945 to 35,231,000 in October but rose by November 1946 to about 40,600,000.

By November 1946, veterans had been largely reabsorbed into the employed labor force. More than 13,000,000 male veterans had been discharged; 10,680,000 of these were employed; 1,100,000 were in schools; 700,000 were reported as unemployed; and 550,000 were on vacation or had retired or were unable to work. By November, monthly job placements of disabled veterans had tripled since February.

RECONVERSION SHIFTS IN EMPLOYMENT

The overall picture of employment and unemployment gives little indication of the remarkable extent and rapidity of industrial and regional shifts in employment. Industrial shifts are strikingly illustrated by the transportation equipment group. In January 1944, employment in that group (excluding automobiles) was 2,611,000; in July 1945, the number was 1,577,000; and in October 1946, after a virtually uninterrupted decline, only 442,000. In another industry group, the stone, clay, and glass products industries, employment fell with American entry into the war from 396,000 in November 1941 to 310,000 in September 1945 but rose to 411,000 by October 1946. The extent of change in many of the individual industries was much more extreme.

Reconversion declines in employment were usually in high-wage industries. Thus, in the transportation equipment group, hourly earnings averaged $1.301 in July 1945, in contrast to an average of only $0.931 in stone, clay, and glass products, with rising employment. In textile mill products, with employment rising from 1,051,000 in July 1945 to 1,224,000 in October 1946, hourly earnings in July 1945 averaged only $0.763. A major gain in employment outside of manufacturing occurred, however, in construction, with relatively high wages. Estimated total employment in construction, including salaried workers, rose from 911,000 in July 1945 to 2,084,000 in October 1946.

The gravity of reconversion problems of reemployment, despite the favorable overall status of employment, is indicated by regional changes in factory employment. Changes in a few selected metropolitan areas between July 1945 and October 1946 are shown, by way of illustration, in the accompanying table. It should be noted, in addition, that declines in employment had occurred in many war industries before July 1945, so that employment in that month was commonly already below the wartime peak.

INDEXES OF FACTORY EMPLOYMENT IN SELECTED METROPOLITAN AREAS, JULY 1945 AND OCTOBER 1946

(1937 = 100)

	July 1945	October 1946	Per Cent Change
Albany, N. Y.	111.1	93.4	−16
Columbus, O.	144.6	108.8	−25
Dallas, Tex.	207.1	129.0	−38
Dayton, O.	109.6	137.6	+26
Des Moines, Ia.	266.6	139.3	−48
Duluth, Minn.	189.6	79.5	−53
Erie, Pa.	124.9	141.1	+13
Grand Rapids, Mich.	78.6	103.0	+31
Jacksonville, Fla.	161.9	88.3	−45
Kansas City, Mo. and Kan.	190.0	104.9	−45
Lowell, Mass.	81.4	92.9	+14
New Orleans, La.	191.3	101.6	−47
Norfolk, Va.	238.6	113.8	−52
Oklahoma City, Okla.	299.4	104.0	−65
Omaha, Neb.	177.6	82.8	−53
Portland, Ore.	379.1	120.1	−68
Salt Lake City, Utah	82.7	66.4	−20
San Antonio, Tex.	119.3	140.6	+18
San Francisco, Calif.	249.0	141.5	−43
Tacoma, Wash.	207.4	84.6	−59
Tulsa, Okla.	318.1	119.5	−62
Wichita, Kan.	577.4	274.8	−52
Youngstown, O.	87.9	99.1	+13

Workers in the new establishments for making aircraft, ships, explosives, and other military goods had moved to these plants from various other industries and often from distant parts of the country. The return of these workers and of millions of veterans to peacetime pursuits created grave problems not merely of reemployment but also of occupational readjustment and maintenance of earnings and standards of living.

WAGE DEMANDS AFTER V-J DAY

Labor-management disputes were mainly over wages. Family earnings during the war had risen partly by virtue of wage-rate increases but even more largely because of a longer work-week, premium pay for overtime and extra shifts, opportunities for jobs in high-wage employments, and work by additional members of many families. Much of the increase was therefore temporary. Average weekly earnings in manufacturing had begun to decline before V-J Day and had fallen from $47.50 in January 1945 to $40.87 in September 1945. In some industries the decline was much greater; in the transportation equipment group (excluding automobiles) the average fell from the December 1944 peak of $63.33 to $46.56 in November 1945.

In many industries the wage-rate advances throughout the war period had been restricted to substantially the 15 per cent increase allowable under the Little Steel Formula. In contrast, the prices of consumers' goods and services had risen 28.2 per cent between January 1941 and August 1945. Real earnings were also affected adversely by scarcity, decline of quality, and other factors not fully reflected in the price advances.

Workers were inclined to make wage demands on the basis not only of the decline in weekly earnings but also of the relative status of wages and other types of income. Reports of continued increases in non-wage income, such as corporate profits and farm income, while weekly earnings were declining, were widely viewed as a basis for substantial advances in wages.

The termination in August 1945 of the pledge against work stoppages and the relaxation of public controls of wages, hours, and prices gave renewed importance to collective bargaining. The efforts of the Labor-Management Conference in November 1945 to work out a general basis of agreement to take the place of the wartime arrangements achieved no substantial success, and normal procedures for adjusting differences proved to be inadequate to meet the immediate post-war situation.

LABOR-MANAGEMENT DISPUTES IN THE EARLY RECONVERSION PERIOD

Petroleum.—An early demand for a wage-rate increase to cushion the fall in earnings due to reduction of hours and premium pay was made by the Oil Workers International (CIO). An advance of 30 per cent in wages was demanded, a rise that would maintain weekly earnings at straight-time with a 40-hour week at about the same level as with the 48-hour week including time and one-half pay for hours above 40. The controversy involved a partial work stoppage on Sept. 17, 1945, seizure of major plants on Oct. 4 by the Navy Department, and the appointment, on Nov. 27 of a fact-finding panel. The panel on Jan. 12, 1946 recommended an increase of 18 per cent, which certain companies had already negotiated with the union. Final settlement by major companies was made on that basis.

Automobiles.—A strike of about 200,000 General Motors Corporation employees, beginning Nov. 21, 1945, was not ended until March 15, 1946. The main demand of the union (UAW-CIO) was a 30 per cent increase in wages. The union based its demand on the ability of the company to meet the demand without increases in prices. The company refused to participate in hearings before the Presidential fact-finding board, appointed to study the dispute, on the ground that the company's ability to pay was not a proper subject of inquiry by the board. On Jan. 10, 1946, the board recommended an increase of 19.5 cents per hour. The company rejected the recommendation, but on Feb. 11 offered 18.5 cents per hour, an offer which was rejected in turn by the union. The final agreement on March 13 provided, however, for an increase of 18.5 cents per hour with certain supplementary adjustments, including improved vacation pay.

Electrical Equipment.—Three major work stoppages began in January 1946—in the electrical equipment industry (Jan. 15), meat packing (Jan. 16), and steel (Jan. 21). In the electrical equipment industry, the United Electrical, Radio and Machine Workers called out about 200,000 members in an effort to enforce the demand for an increase of $2 per day. Workers in the General Motors Corporation's electrical division agreed early in February to an increase of 18.5 cents. On March 14, a similar agreement was made with the General Electric Co. The Westinghouse settlement for 18 cents, with certain supplementary adjustments, was not made until March 9.

Meat Packing. — The unions involved in the meat packing dispute included those affiliated with both the AFL and the CIO. Their demands, although differing in detail, called chiefly for increases in rates to compensate for declines in earnings due to actual or expected reductions in hours and premium pay. Negotiations, which had extended over several months, culminated in a brief work stoppage beginning on Jan. 16, 1946. Wage demands, together with the claims of the companies to advances in prices if wages were to be raised, involved the entire wage-price stabilization policy. A fact-finding board recommended on Feb. 7 an increase of 16 cents per hour, and the National Wage Stabilization Board on Feb. 26 approved the increase, concurrently with an authorization by the Director of Economic Stabilization of an increase in prices.

Steel.—The dispute in the iron and steel industry, involving the United Steel Workers (CIO), resulted in a strike of about 750,000 men, the largest of all of the work stoppages. The union demanded an increase of $2 per day. The steel companies insisted that the demands would require advances in steel prices contrary to price stabilization policy. The compromise settlement of Feb. 15, 1946 with the United States Steel Corporation and somewhat later with other companies called for an increase of 18.5 cents in wages, concurrently with an advance of $5 per ton in the price of steel.

THE WAGE-PATTERN POLICY

The major wage disputes outlined above resulted in wage advances considerably larger than most of the increases that had been obtained in other employments after V-J Day.

Wage increases generally had been obtained within the existing price structure or on the basis of minor price adjustments permissible under the 33 per cent cost-of-living formula, which had permitted wage increases up to 33 per cent above January 1941, even if price increases were necessary. Recommendations of early fact-finding boards, ranging from 14 per cent in the Greyhound Bus case to 20 per cent in the meat packing case, were made by the boards within the framework of existing wage-price policy. In many similar employments, however, comparable wage increases could be obtained only at the cost of price increases involving a change in wage-price policy. Workers in employments not benefited by the comparatively large increases naturally looked upon these increases as setting a pattern, without regard to the question of price relief demanded by employers. These workers emphasized the maintenance of an equitable wage relationship with those industries in which the larger advances in wages had been obtained.

This problem confronted some of the fact-finding boards, and it came to a head before the NWSB in the meat packing and steel cases. The solution in essence was the adoption of the wage-pattern policy in an executive order of Feb. 14, 1946. That order recognized general patterns of wage adjustment as established in an industry or local labor market area after Aug. 18, 1945. An employer who found it necessary to raise the wages of his workers in order to conform to that pattern could seek price relief to compensate him for all or part of the wage increase.

DISPUTES IN COAL-MINING

The disputes over the renewal of the 1945 bituminous-coal agreement were of outstanding importance because of questions collateral to wages, especially the welfare and retirement fund and safety demands, and because of the role of the Federal Government. The National Bituminous Wage Conference convened in Washington on March 12, 1946. The demands of the union were not at first clearly defined but they included three proposals which deadlocked the conference. These were the demands for a health and welfare fund to be financed by the company and administered by the union, a Federal system of safety standards, and unionization of supervisory, technical, and clerical employees. On March 26, the union gave notice of termination of the agreement. On March 31 the men walked out. A two-weeks' truce was ordered by the union on May 13.

It became apparent that no agreement could be reached during the two-weeks' truce, and on May 21 the President instructed the Secretary of the Interior to take possession of the mines and conduct negotiations with the union. At the end of the two-weeks' truce another work stoppage occurred, but on May 29 an agreement was signed by the Secretary of the Interior as Coal Mines Administrator and the president of the UMWA. The men were then ordered to return to work.

Major provisions of the agreement included a welfare and retirement fund financed by 5 cents per ton on coal and to be managed by trustees, one appointed by the union, one by the administrator, and a third by the other two; a Federal mine safety code, Federal inspection, and mine safety committees to be selected by the local unions; a continuance of wartime hours of work, with overtime rates to be paid after 7 hours per day and 35 hours per week; and a basic hourly increase of 18.5 cents, which, with overtime beyond 7 hours, gave a daily increase of $1.85 for a nine-hour day. The agreement was described by the union as embodying "the greatest economic and social gains registered by the UMWA in a single wage agreement since the birth of the union in 1890." Later events in the industry are described in another connection.

The renewal of the anthracite agreement, which expired on April 30, also gave rise to prolonged negotiations and a nine-day work stoppage ending on June 7. The agreement between the union and the operators followed in most respects the May 29 agreement in bituminous-coal mining.

RAILROAD DISPUTES OVER WAGES AND RULES

The 1946 railroad labor disputes were particularly noteworthy because of their connection with labor legislation, their bearing on inter-union relations, and the tie-up of a vital public utility. In accordance with procedures under the Railway Labor Act, 20 unions served notices on the carriers late in 1945 asking for wage increases, and many of the unions also demanded changes in working rules. The National Mediation Board obtained arbitration agreements between 15 unions of non-operating employees and three of the unions of operating employees (the unions representing conductors, switchmen, and firemen). These agreements waived rules changes. The non-operating employees requested an increase of 30 cents per hour, and the conductors, switchmen and firemen requested an increase in basic daily rates of $2.50.

The two arbitration boards (one for the non-operating and one for the operating group) met in Chicago on Feb. 18, 1946. The award for the non-operating employees was 16 cents per hour and for the operating employees, $1.28 in basic daily rates, amounting, for an eight-hour day, to 16 cents per hour. The 18 unions affected contended that the increases were inadequate and soon after the awards were granted served notices on the carriers that they would seek additional increases in accord with the procedure of the Railway Labor Act.

The two other unions of operating employees, Brotherhood of Railroad Trainmen and Brotherhood of Locomotive Engineers, had rejected arbitration, refusing to waive changes in rules. These two unions set a strike date for March 11, 1946. An emergency board appointed under the Railway Labor Act met concurrently in Chicago with the arbitration boards to hear the demands of the two unions for an increase in basic daily wages of $2.50 and for rules changes. The emergency board recommended the same wage increase as had been awarded by the arbitration boards and also recommended certain changes in rules. The engineers and trainmen refused to accept the recommendations and set a new strike date for May 18. On May 17, the railroads were taken over by the Office of Defense Transportation. The two unions postponed their strike date to May 23, when, negotiations failing, the strike order became effective, forcing a general stoppage of railroad service.

The President intervened, requesting the members of the unions to return to work, and stating that the armed forces would be ordered to run the trains if the work stoppage was not ended by 4 P.M. of May 24. The President on that day appeared before Congress, requesting emergency legislation; but just before the deadline set by the President, the two unions announced that they had signed an agreement with the carriers. The agreement provided for an increase of 2.5 cents per hour beyond the recommendation of the emergency board (a total of 18.5 cents), the addition being in lieu of rules changes. On the same day the other 18 unions signed an agreement with the carriers for an additional 2.5 cents per hour. The railroads were returned to private ownership on May 26, 1946.

INCREASES IN WAGE RATES

For a number of months after V-J Day, few important changes occurred in wage rates. Average hourly earnings of factory workers declined, but their straight-time hourly earnings weighted by January 1941 employment rose about one cent by October 1945. Between V-J Day and May 1946, increases in basic rates of all factory workers averaged about 11.5 cents per hour, including about 21 per cent of the total who received no general increases. Even among those who received increases, 67.5 per cent obtained less than 18.5 cents, an increase which was widely viewed as a general rise. Increases in wholesale and retail trade and various other non-manufacturing groups were materially smaller than in manufacturing; and as a rule, larger percentages of these workers than of factory workers received no increases.

Relatively small wage-rate increases occurred after May 1946. The straight-time hourly earnings of all factory workers combined, when computed in a manner to indicate the approximate change in rates, rose somewhat more than 4 per cent. During May, workers in railroad transportation and coal mining received an increase of 18.5 cents in basic rates. In other non-manufacturing industries, the main increases between May and October were in electric light and power, street railways and buses, metal mining, and quarrying and non-metallic mining. Scattered increases, averaging 4 to 5 cents for all workers, were obtained by employees in wholesale and retail trade.

Farm wage rates continued to advance. The rate per day without board rose from $4.39 in October 1945 to $4.94 in October 1946. The rise was affected only to a slight extent by shifts in regional employment and types of crops; the employment of hired farm workers underwent little change except of a seasonal nature.

CHANGES IN GROSS HOURLY EARNINGS

The gross average hourly earnings of factory workers fell from $1.033 in July 1945 to $0.985 in October of that year. The rise by October 1946 brought the average to $1.130. The early decline was caused by reductions in the proportion of premium payments for overtime and extra shifts and in the relative number of workers in high-wage employments. In durable-goods manufacturing industries, with relatively high wages, average weekly hours fell from 44.9 in July to 41 in September 1945, and employment fell from 7,054,000 to 5,234,000. In non-durable-goods industries, paying lower wages with few exceptions, average hours fell from only 42.8 to 41.8 during the same period, and employment underwent little change. By September 1946, employment in manufacturing had reverted to substantially the relationship existing between durable-goods and non-durable-goods industries in January 1941.

In October 1946, the average of the gross hourly earnings of factory workers was 9.7 cents higher than in July 1945. Straight-time hourly earnings, when computed to measure roughly the changes in wage rates, rose 16.2 cents during the same period. The difference, 6.6 cents, is a rough measure of the effects on hourly earnings of reductions in premium pay for overtime and in opportunities for jobs in high-wage industries.

Increases in average hourly earnings occurred in all industries. In manufacturing industries, the advances between October 1945 and October 1946 ranged from 5 per cent in small-arms ammunition to 27.7 per cent in cotton goods, the average increase in all manufacturing being 14.7 per cent. In the various non-manufacturing industries reporting to the Bureau of Labor Statistics, the increases during the same period ranged from 8.6 per cent in power laundries to 18.4 per cent in copper mining. Reconversion changes reflect in part a movement toward a new post-war equilibrium of wages as between industries after the uneven wartime changes.

CHANGES IN AVERAGE WEEKLY EARNINGS

During the war, weekly earnings rose more rapidly than basic wage rates. During reconversion, when hours were falling and some of the other factors affecting weekly earnings were reversed, declines in earnings in many employments, together with continued advances in prices, pressed seriously on standards of living.

The net effects on average weekly earnings of reconversion changes, such as the downward pressure of reductions in hours and in the relative number of workers in high-wage employments, and the upward pressure of rising wage rates, are illustrated by the following tabulation:

	Average Weekly Earnings					
		Wartime Peak		Reconversion Low (After August 1945)		
	1944	Month	Amount	Month	Amount	October 1946
All manufacturing	$46.08	Jan. 1945	$47.50	Feb. 1946	$40.58	$45.68
Printing and publishing and allied industries	44.13	June 1945	46.93	Oct. 1945	48.01	54.34
Transportation equipment (except automobiles)	60.28	Dec. 1944	63.33	Nov. 1945	46.56	54.22
Retail trade	26.58	July 1945	29.40	Nov. 1945	28.88	33.19

Striking differences are to be noted in the effects of war and reconversion on average weekly earnings. The average in the printing and publishing group, for example, rose very slightly during the war but continued to advance after V-J Day. In contrast, the average for the transportation group rose rapidly to $63.33 in December 1944 and declined even before V-J Day. The reconversion low of November 1945 was $46.56, and the average of October 1946 ($54.22) was still 14 per cent below the wartime peak. In most of the non-manufacturing industries, hours of work underwent relatively little change (coal mining being a noteworthy exception), and weekly earnings generally rose less but also declined less than in manufacturing. In a few of the non-manufacturing industries, no declines occurred.

In manufacturing as a whole, the weekly earnings average in October 1946 was 13 per cent above the reconversion low point but 4 per cent below the wartime peak. The average in October was slightly below the average for 1944 and approximately the same as in the month before V-J Day.

PRICES AND REAL WAGES

Price Trends.—The early reconversion period brought few significant changes in prices. Early in 1946, however, it became apparent that price controls would be radically relaxed. The temporary lapse of controls in July, the final enactment of restricted controls, and the progress of decontrol measures accelerated the price advance. The major part of the increase between V-J Day and November 1946 occurred after May 1946. Between May and November, the consumers' price index rose 15.2 per cent, and the wholesale price index, 25.8 per cent.

Comparative changes in consumers' prices and wholesale prices during war and reconversion are shown in the following tabulation:

	Percentage Increase to November 1946 from ——			
	August 1939	August 1945	November 1945	May 1946
Consumers' prices	53.9	17.3	17.3	15.2
Retail food prices	100.7	33.2	34.0	31.6
Wholesale prices	86.1	32.1	30.7	25.8
Farm products	178.4	33.8	29.5	23.5
All commodities other than farm products	70.5	31.6	31.1	26.4
Foods	146.1	55.5	53.3	48.3

Wage-price Relationships. — Price changes of special significance in relation to wages were the comparatively large increases in the prices of farm products and of both the wholesale and retail prices of foods. During the entire period of war and reconstruction, farm prices rose 178 per cent in contrast to 71 per cent for all other commodities; and farm prices during reconversion continued to advance substantially the same as other commodities. During both the war and the reconversion periods, the advance in the retail price of foods (related closely to the wholesale prices of farm products) rose far more than other consumers' prices, and in the two periods combined approximately doubled the rise in the general level of consumers' prices, including foods.

These trends are doubly significant in relation to wages. First, wages have relatively small effect on farm costs and prices because only about one out of four farm workers is a wage earner. Second, foods form the main item in consumers' prices, and the exceptionally large increase in food prices therefore accounts for the major part of the increase in consumers' prices. The rise in farm prices has also been reflected in relatively large increases in clothing and house furnishings, which are also important items in consumers' prices.

The impact of rising consumers' prices on wages was especially severe in relation to weekly earnings. The effects on real weekly earnings varied widely with different types of employment. Extreme declines in real weekly earnings may be illustrated by the transportation equipment group (excluding automobiles). The average of the real weekly earnings of workers in that group was 27 per cent lower in October 1946 than in December 1944 (peak month of their money earnings). If the average of real weekly earnings of all factory workers in April 1945 (V-E Day, and the approximate beginning of reconversion) is compared with the average of October 1946, the decline in real weekly earnings was about 17 per cent.

In comparison with pre-war periods, real weekly earnings show advances in most employments. The higher current levels reflect in part higher levels of hours of work, with some increases in premium pay, and in part the advances in the productivity of labor. The sharp reconversion declines in real weekly earnings, when profits and farm incomes were rising, nevertheless confronted workers with serious problems during a period of difficult readjustment to new jobs and new living conditions.

DECONTROL AND WAGE-PRICE PROBLEMS

The wage-pattern policy, adopted Feb. 14, 1946, affected price policy by extending the types of wage adjustments for which price relief could be obtained. The strong pressures on price controls exerted by business and farm groups were reflected in the prolonged debates over the renewal of controls, which, according to the existing law, were limited to the period ending July 31. The bill for renewal of controls was passed late in the fiscal year but with such modifications as to fail of approval by the President. A new price control bill, signed "reluctantly" by the President on July 25, followed the temporary suspension of controls. The new act restored rent control, revived some of the food price ceilings on Aug. 20, vested certain powers in a decontrol board, reduced subsidies which had been an important factor in restraining price advances, and liberalized the profit basis for fixing price ceilings.

The difficulties of readjusting the price control machinery to meet the requirements of the new control bill, together with widespread opposition to controls, led to the acceleration of decontrols. This was indicated, for example, by the closing, on Nov. 4, of 1,642 local price control boards, owing to the removal of ceiling prices from the overwhelming majority of commodities supervised by the boards. Immediately after the election, all price controls were abandoned except for the ceilings on rent, sugar, and rice. The breakdown of controls and their final abandonment were attributed by the President to the "unworkable price control law."

In connection with the revoking of price controls, the President pointed out that wage controls after V-J Day had applied only to demands for wage increases that might affect prices, and he stated that the removal of price controls left no basis or necessity for continued wage controls. He therefore, on Nov. 9, issued an executive order terminating all controls designed to stabilize wages and salaries.

In removing price and wage controls, the President stated that the return to a free market with collective bargaining created serious problems, the solution of which became more largely the responsibility of labor and management. He pointed out that industry had sought removal of price controls while labor had pressed for removal of control of wages, and that both had insisted that decontrol would lead to increased production. He urged upon labor and management the working out of agreements for the adjustment of their differences without interruption of production.

The temporary suspension, radical modification, and final removal of controls brought about a rapid rise in prices with declines in real weekly earnings and increases in profits. This situation in turn gave rise to demands for further wage increases.

UNION ARGUMENTS FOR FURTHER WAGE INCREASES

Union officials emphasized the unfavorable reconversion trends of real wages, especially of weekly earnings. As for wage-rate changes, they pointed to the unequal extent of change, as for example, the fact that between V-J Day and May 1946, the rise in factory rates averaged only about 11.5 cents, with more than a fifth of factory workers and larger proportions of non-factory workers obtaining no increases. They stated that wholesale prices received by employers had risen far more, especially by the fall of 1946, than gross average hourly earnings, or the average cost of an hour of labor. Between July 1945 and October 1946, wholesale prices rose 26.6 per cent and continued upward; whereas, the gross average hourly earnings of factory workers rose only 9.4 per cent.

Another union argument for further wage advances was the considerable rise in forms of income other than wages. A statement published by the AFL asserted that "total profits after taxes reached a new peak in 1946" and that "American business firms in general were well able to pay higher wages." A much discussed report issued in December under the sponsorship of the CIO, asserted that the existing price and wage structure yields a corporate profit, before taxes, equal to the wartime peak and after taxes, almost 50 per cent above the wartime peak. Manufacturing corporations, it was asserted, had a fourth-quarter rate of return on net worth of 11.6 per cent and if the rate of return had been no greater than the 1936-39 average rate, their annual profit after taxes on the basis of fourth-quarter earnings would have been more than $2,000,000,000 in excess of the 1936-39 average.

It was argued that, in the absence of price controls, it would be difficult to reduce prices and that large increase in profits threatened the balance and stability of the nation's economy. The country was urged to learn the lesson of 1924 to 1929, when the failure "to raise wages substantially while productivity and profits were increasing resulted in a devastating depression" and that "substantial wage increases must now be made if we are to attain and maintain sufficient purchasing power to keep our economy moving full speed ahead."

Union pronouncements regarding wages commonly recognized increased productivity as a necessary basis for supplying goods to meet current demands, restraining inflation, and raising wages. An AFL statement in October expressed the view that, on the basis of past increases in production per man-hour and an extremely rapid increase expected in the immediate future, "unions can soon win wage increases without raising prices." The president of the CIO pointed out that advances in productivity were especially rapid after the First World War and that similar advances are under way and may be expected to continue.

The views of union officials, and particularly their arguments on the basis of the rise in profits, were widely criticized. It was pointed out in particular that aggregate profits do not reveal the profit status of particular industries and firms and that profits are to be viewed as highly variable, depending upon many factors other than those that affect wages. There was nevertheless an extensive recognition by employers themselves of the need to advance wages as rapidly as productivity and costs of production permit. Rising wages, under conditions of increasing efficiency and normal peacetime demands, were widely recognized as a necessary basis of maintaining high levels, not only of living standards but also of the demand for the products of industry on which production and employment depend.

RENEWAL OF WAGE DEMANDS

The unions generally held that, in view of the change in price policy and the rapid rise in prices, the efforts to stabilize wages should be discontinued. Before final decontrol measures had been adopted, extensive demands were made for wage increases.

An early attack on wage stabilization policy was made by the United Mine Workers. The union on Nov. 21 requested a reopening of the Krug-Lewis contract of May 29, on the ground that price policy had been changed and that the terms of the former agreement carried over and permitted reopening upon 10-days' notice and also permitted termination of the contract following 15 days of negotiations and a 5-day notice of termination. The demands included wage-rate increases and reductions of hours and also an increase in the amount paid by operators to the welfare fund. The Secretary of the Interior held that the terms of the contract with the Government provided for its remaining in full force and effect for the period of government operation except by joint consent. Negotiations failing, the president of the union gave formal notice on Nov. 15 of expiration of the contract on Nov. 20. On Nov. 18 the Government obtained from the Federal District Court of the District of Columbia a temporary order to restrain the union from terminating the contract, implying a work stoppage. The order was disregarded, and on Nov. 21, a virtually complete work stoppage occurred. On Dec. 4, the union was fined $3,500,000, and the president of the union, $10,000. The decision was appealed, but on Dec. 7, the workers were ordered by the president of the union to return to work until March 31, to free the Supreme Court "from public pressure" and to supply coal required by "public necessity."

Various unions carried on negotiations with employers for wage increases commonly described as the "second round." The unions in the meat packing industry reached agreements with major packing firms for extensive increases in wages and other changes. The agreement announced on Dec. 19 with Armour and Co., for example, included provisions for wage increases from 7.5 to 23 cents per hour, a narrowing of geographical differentials, sick leave, holiday and vacation arrangements, and study of proposals for a guaranteed annual wage. An agreement with the Sinclair Oil Corporation, announced Nov. 16, called for a wage increase equivalent to about 18 cents per hour based on a 40-hour work week and for further adjustments on a quarterly basis if the cost of living shows a movement of three points or more in either direction, rates not to fall below the level of Nov. 15, 1946.

In June, CIO unlicensed seamen obtained extensive increases in wages. Somewhat later, AFL seamen obtained somewhat larger increases, which, however, were disallowed by the NWSB. After an almost complete tieup of shipping beginning on Sept. 5, the additional increases were approved for government operated ships on Sept. 12 by the Director of Economic Stabilization as being consistent with the Government's policy of paying prevailing wages. The strike was continued, however, by

CIO unions, seeking similar increases. but on Sept. 20-21 an arbitration award was accepted. At the end of September the licensed personnel of shipping lines and the West Coast longshoremen went out on strike for renewal of agreements with wage increases. The strike was ended in East Coast and Gulf ports on Oct. 22 but not in West Coast ports until Nov. 17-18. The gains included an increase of 15 per cent in wages and concessions as to night work and overtime.

A considerable number of national unions either entered into negotiations late in the year or took steps to prepare for negotiations. Many of the unions indicated plans for presenting demands for various changes and adjustments in addition to specific wage increases. The CIO Convention, meeting in Atlantic City in November, declared that it is necessary "American industry in collective bargaining give substantial wage increases." Other resolutions supported a raising of the minimum wage under the Fair Labor Standards Act and called for a broad program to give workers "a rounded protection in their living standards through collective bargaining contracts providing for adequate pension plans, health insurance plans, group hospitalization programs, and a guaranteed annual wage." Discussion of guaranteed wage plans had been extensive throughout the year, and the Advisory Board of the OWMR (Office of War Mobilization and Reconversion), which had undertaken a study of the subject, presented in November an interim report which summarized much of the available data and made tentative recommendations. Another important union demand (discussed in connection with court decisions) also involved changes other than in wage rates, namely, the application of existing rates to travel time or its equivalent.

LABOR ORGANIZATIONS

The growth of union membership during the war was followed by declines in some industries because of reductions in employment. The United Automobile Workers, for example, attained a membership in excess of 1,000,000 by the middle of 1944; but the layoff of war workers, beginning before the end of the war, caused a considerable drop in membership. A steady increase was reported, however, for the year 1946.

Estimates of union membership toward the end of 1946, as derived from various union sources, indicate a total membership of between 14,500,000 and 15,000,000; the AFL affiliates, slightly more than 7,000.000; the CIO, about 6,000,000; and independent or unaffiliated unions, between 1,500,000 and 2,000,000. The main independent or unaffiliated unions are the International Association of Machinists, the railroad brotherhoods of train and engine service men, and the National Federation of Telephone Workers.

Changes in the affiliations of unions included the return after ten years of the United Mine Workers to the AFL. The Progressive Mine Workers of Illinois withdrew from the Federation. The International Association of Machinists, which was suspended by the AFL in December 1945, remained unaffiliated. The National Farm Labor Union became an affiliate of the AFL under a charter issued in August. The Amalgamated Lithographers joined the CIO in May after withdrawing in 1945 from the AFL. The Utility Workers Union of America, formed by a combination of the United Utility Union and the CIO Utility Workers Organizing Committee, became an affiliate of the CIO. The United Public Workers of America also became a CIO affiliate upon the amalgamation of the United Federal Workers and the State, County, and Municipal Workers. The National Federation of Rural Letter Carriers, AFL, merged with the Federation's National Association of Letter Carriers. The independent Airline Communication Employees Association merged with the American Communications Association, CIO. The AFL in August authorized the creation of the Maritime

Trades Department as a fifth department of the Federation. A Committee for Maritime Unity had previously been formed by CIO unions, but it encountered internal disagreements toward the end of the year.

The most extensive organizing activities of the year by both the AFL and the CIO were in the South. In May, the AFL revived its biennial Southern Conference, suspended during the war, and set up a policy board of 45 southern representatives of the Federation, with an executive committee to carry on the organizing movement. The AFL plan included an agricultural program to modify the South's dependence on cotton by promoting industrialization and agricultural diversification. A CIO Organizing Committee for the South set up a staff of 250 workers paid directly by the Committee, and about 30 field workers taking part in the drive were paid by the different unions of the CIO. Special effort was given to the organizing of workers in the textile, woodworking, food and tobacco, steel, oil, and chemical industries.

Various major unions continued to develop their research and public relations activities. The Executive Council of the AFL reported to the Convention that the most effective means of presenting the Federation's point of view to the public was its enlarged radio program. The CIO also reported an intensification of its radio activities and indicated an intention to extend its activities into the field of FM stations, several FM licenses having been obtained by CIO unions. The labor press continued to expand not only in the field of periodicals but also in connection with the extensive distribution of pamphlets. The CIO reported, for example, a total circulation of more than 325,000 for its pamphlet entitled "The Truth About CIO." The AFL reported the adoption of a retirement plan for its employees. The Federation also indicated significant progress in strengthening its ties with the Cooperative League of the United States.

In the political field, both the AFL and the CIO continued their policies of opposing the nomination and election of individuals who were viewed as unfavorable to labor and of supporting labor's friends. These activities were intensified by the widespread agitation for restrictive legislation, both state and national. Both of the major organizations also continued their efforts to obtain favorable court action against various state laws viewed as unconstitutional and as unduly restrictive of union activities.

FEDERAL LAWS AFFECTING LABOR

Numerous proposals were made for an extension of social security legislation to additional groups, with additional types of benefits, particularly in the field of medical and hospital facilities. The only Federal enactment in that field during the year was an amendment of the Railroad Retirement Act approved July 31. The new act gave railroad employees increased unemployment compensation benefits and sickness benefits for 26 weeks, and provided for increased retirement annuities, survivors benefits, and disability benefits.

A measure of outstanding importance was the Employment Act of 1946, approved Feb. 18, 1946. Although less definite in its terms than the original bill, the act declared it to be the policy and responsibility of the Federal Government to use all practicable means, in cooperation with state and local governments and with industry, agriculture, and labor, to create and maintain conditions such as are necessary to afford adequate employment opportunities and to promote maximum employment, production, and purchasing power. The measure created a three-member Economic Council to analyze and interpret economic developments, appraise public programs and activities, and develop and recommend to the President a national economic policy. Under the act the President will transmit to Congress an annual economic report, including a general economic analysis and a program for carrying out the policy of the act. A joint committee of Congress was authorized to analyze the economic report and coordinate Congressional activities affecting the carrying out of the law.

The Anti-racketeering Act of 1934 was amended on July 3 to extend its coverage to labor unions. The act made it a felony to interfere, by robbery or extortion or by threats or violence, with movement of goods in interstate commerce. Another restrictive labor law approved April 16 (later declared unconstitutional by a lower court) was the so-called Petrillo Practices Act to prohibit certain practices which the bill described as interfering with the rights of radio station licensees. Congress also included in various appropriation bills clauses forbidding strikes by Federal employees by providing that no wage or salary should be paid to any person who is a member of an organization of government employees that asserts the right to strike against the Government of the United States.

Increases in the wages and salaries of Federal employees, effective July 1, 1946, averaged about 13 per cent, the percentage advances being relatively large in the lower classifications. A separate act provided a flat increase of $400 per year for postal employees.

◆

PROPOSALS FOR FEDERAL REGULATIONS OF UNIONS

Recurring demands were made by various groups for legal restrictions on labor unions and particularly on the right to strike. These demands included modifications of the National Labor Relations Act to restrict unions and extend the rights of employers. The terms of that act were not amended, but a restriction of funds available to the National Labor Relations Board seriously affected the speed of its actions in holding elections for determining collective bargaining units during a period of organizing drives and increased demands for such elections.

Demands for restrictive legislation were brought to a head by the coal and railroad disputes. The Railway Labor Act of 1926 and later amendments had given protection to railroad workers as to collective bargaining rights but had provided a "cooling-off" period for action by the National Mediation Board and emergency boards preceding the exercise of the right to strike. The War Labor Disputes Act of 1943 had also provided during the war period for formal strike notices in war industries, strike votes by workers, and a 30-day "cooling-off" period. There had been no serious railroad strikes since the passage of the Railway Labor Act, but wartime procedures under the act had worked far from smoothly. The War Labor Disputes Act had failed to prevent serious reconversion work stoppages.

On May 29, immediately after the settlement of the railroad disputes and on the final day of the bituminous-coal strike, final action was taken in Congress on the Case Labor Disputes Bill. This bill imposed several important restrictions on union activities, but the bill failed of passage over the President's veto.

During the railroad strike, the President appeared before Congress on May 25 to request rigorous emergency legislation for dealing with situations such as resulted from the tie-up of the railroads. The bill he proposed, although passed by the House, failed of enactment in the Senate. The President, in his message on May 25, 1946, and also in his veto of the Case Labor Disputes Bill, requested that Congress formulate a long-range labor policy. He proposed in particular a joint Congressional committee to analyze the underlying causes of industrial strife and to formulate a policy designed to deal with causes and not merely to strike at "symptoms." These recommendations, however, were not adopted by Congress. Renewed demands for legislation followed the walkout of bituminous-coal miners on Nov. 20.

EXTENT OF STRIKE ACTIVITY

The year was marked by work stoppages more extensive than in any period since 1919, after the First World War. From December 1945 to November 1946, there were 4,470 walkouts, directly involving about 4,595,000 workers, and entailing, for these workers, about 115,193,000 man-days of idleness, or about 1.5 per cent of the estimated available working time of all workers. In 1919, the estimated number of workers directly involved in strikes was 4,160,000, hardly as large as the number in the year ended in November 1946, but total employment had greatly increased, and the number of workers involved in 1919 was about 21 per cent of potential employment—much larger than in 1946. Estimates of man-days idle in 1919 are not available.

The month of most serious work stoppages in 1946 was February with 21,500,000 man-days of idleness, representing 3.94 per cent of available working time. By the end of the year, strike activity had been almost completely halted.

CAUSES OF WORK STOPPAGES

There were numerous causes of the unusual wave of strikes in 1946. Earnings were reduced by loss of job opportunities in high-wage war industries and especially by loss of overtime and premium pay. Dissatisfaction with reduced earnings was accentuated by rising prices and by the continued favorable position of corporate profits and farm income, especially after the reduction of war taxes. The relaxation of wartime controls and release of wartime tensions intensified the problems of both unions and management. The shifting of millions of civilian war workers to new jobs, often in new areas, and the reabsorption of about 12,000,000 members of the armed forces gave rise to serious maladjustments in labor-management relations, which were aggravated by rising prices, housing problems, and shortages of various kinds.

The termination of various war agencies and the transition to almost complete dependence on voluntary collective bargaining placed a tremendous additional burden upon the Conciliation Service of the Department of Labor. The wartime principles of wage and price stabilization had served as the basis not only of official directives but also of agreements through collective bargaining. New standards and new procedures were required for the difficult period of transition.

PLANS FOR PEACEFUL ADJUSTMENT OF DISPUTES

Peaceful collective bargaining sufficed in the vast majority of disputes. The Director of the Conciliation Service reported that "even in this worst year, despite all the economic pains of reconversion, more than 45,000 agreements between employers and unions have been consummated peacefully without any interruption of work." The Director also announced a number of measures to facilitate and improve collective bargaining procedures.

On Dec. 16, 1946, the Director of the Conciliation Service made public a policy statement by the Labor-Management Advisory Committee. The statement reaffirmed support of the Government's policy of a full return to collective bargaining and voluntary mediation through the Conciliation Service. The committee recognized the peculiar difficulties of the transitional period and recommended four "mediation techniques" to supplement the daily mediation efforts of conciliators. One of these was a panel of men nationally known in labor relations, to be used as special conciliators in major disputes. Another was a system of tripartite panels of industry and labor representatives to serve with Federal conciliators. A third recommendation proposed that collective agreements include provisions for voluntary arbitration as the "terminal point" in grievance procedures and that the Conciliation Service encourage arbitration also in arriving at basic terms of contracts "after all mediation processes have been exhausted." The fourth recommendation was the final resort, in cases of national importance, to emergency boards of inquiry to be set up with the consent of the parties for the purpose of conducting hearings and publishing the findings.

Toward the end of 1946, the Conciliation Service took two additional steps to promote peaceful settlement of disputes. On Dec. 9, representatives of labor and management in the utility industries met in Washington to initiate plans for facilitating collective bargaining. On Dec. 23, a Labor-Management Assembly of the Philadelphia area was convened. The Assembly plan made use of earlier local experiences in Philadelphia, Toledo, and Louisville. It was described as an illustration of flexibility as the keynote of mediation work.

STATE LABOR LEGISLATION

In 1946, only 11 states held regular legislative sessions. In states that held special sessions, only in California was any important labor legislation enacted. The major subjects of action were industrial relations and workmen's compensation.

Industrial Relations.—New Jersey authorized the State Board of Mediation to settle controversies over the determining of collective bargaining units in public utilities. The law requires that in these employments union agreements must be for at least a year and must remain in force an additional year unless the changes desired are specified by the parties in writing. The law provides also for a public hearing panel in case of failure to reach an agreement regarding a new contract, and the Governor is authorized to take possession and operate any public utility to avoid work stoppages. In Louisiana and Virginia, laws were passed to restrict labor unions in regard to picketing and to violation of collective bargaining agreements. A joint resolution in Virginia declared it to be contrary to public policy for any state, county, or municipal official to recognize and negotiate with a union of public employees. Massachusetts adopted a constitutional amendment requiring public reporting of union finances, and amendments in Arizona, Nebraska, and South Dakota imposed prohibitions on the closed shop. Various unions indicated their intention to challenge some of the measures in the courts.

Workmen's Compensation.—Several states amended their workmen's compensation laws. The Kentucky and Virginia acts were changed from an elective to a compulsory basis for employees in certain hazardous employments in Kentucky and for all employers with seven or more employees in Virginia. The coverage of the New York law was extended to include certain classes of domestic workers. The Georgia law was amended to cover certain occupational diseases. Rhode Island established a commission to make codes for the prevention of accidents and occupational diseases consistent with specified nationally accepted safety codes. The level of benefits was raised in California, Kentucky, Massachusetts, New York, and Virginia. In general, however, workmen's compensation benefits have failed to rise in keeping with advances in wages and prices. In California, a disability insurance measure was enacted.

Child Labor.—In Georgia, a new child labor act raised the minimum age for work from 14 to 16 years in various types of employment. Massachusetts for the first time regulated the hours of work of minors on farms. That state followed the earlier example of Connecticut, New York, and Rhode Island in extending the minimum wage law to men. Rhode Island in 1946, and Massachusetts in 1945, prohibited wage differentials based on sex for comparable work.

Migratory Farm Workers.—New York enacted two laws designed to safeguard the interests of migratory farm workers. One measure requires anyone who employs, recruits, transports, or brings into the state as many as 10 out-of-state workers in farm or food-processing employments to register with the state's industrial commissioner and to submit information regarding the housing facilities, working conditions, and wages of the workers. The other law gives to district health officers the power to determine whether or not labor camps in his jurisdiction conform to the public health law or sanitary code and to take action against violators

The problem of migratory labor was one of the subjects of concern to the Thirteenth National Conference on Labor Legislation, held in Washington Dec. 2-4, 1946. The conference was attended by 150 representatives appointed by governors of 43 states. One of the resolutions adopted favored the extension and improvement of social legislation and called for adequate support of state and Federal labor departments. Collaboration of state and Federal authorities was urged for the purpose of raising labor standards throughout the country to the levels of conventions and recommendations adopted by the International Labor Organization. Compulsory arbitration of labor-management disputes was opposed, as was any legislation that would weaken unions or deprive workers of the right to organize and engage in concerted activities.

COURT DECISIONS AFFECTING LABOR

State courts and lower Federal courts rendered a large number of decisions of special importance in the field of recent laws for regulating or restricting the activities of unions. These and other lower-court decisions, however, when of outstanding significance to labor, were for the most part appealed to higher courts. The year was marked also by numerous decisions and orders by administrative agencies such as the National Wage Stabilization Board and the Wage and Hour and Public Contracts Division of the Department of Labor and the National Labor Relations Board. Few of these, however, had to do with important changes in policy.

TRAVEL-TIME PAY

Decisions by the U. S. Supreme Court of unusual interest defined as working time the travel time or other non-productive time spent by workers after they report for work and after they leave their places of work. In the Tennessee Coal, Iron and Railroad Company case, the Supreme Court had earlier ruled in favor of pay for travel time in iron mines under the Fair Labor Standards Act. In the Jewell Ridge Coal Company case, the court had applied the same doctrine to bituminous-coal mining. In June 1946, the court extended the principle of travel-time pay to industry other than underground mining by its decision in the case of *Anderson* v. *the Mt. Clemens Pottery Company.*

The work week under the Fair Labor Standards Act, the court held, "includes all time during which an employee is necessarily required to be on the employer's premises, on duty, or at a prescribed workplace." Hours worked include not only time spent in walking on the premises to the place of work but also preliminary time required for such activities as changing to work clothes and preparation of tools, machines, or materials. The court noted also the similar activities required in reverse after the day's work. It was stated, however, that when "only a few seconds or minutes" are involved, "such trifles may be disregarded."

OVERTIME PAY AND DAMAGES

Numerous suits brought as a result of the Mt. Clemens Pottery case involved retroactive overtime pay and even damages. Toward the end of the year, employers took steps to ask for Congressional action to limit or define their liability under the new interpretation of the Fair Labor Standards Act.

Another Supreme Court decision involving the Fair Labor Standards Act nullified written releases granted by maintenance workers to their employers from damages in return for payment by the employer of overtime under the act. The employer had claimed exemption from the act on the ground that the tenants of the building did not directly ship their products in interstate commerce. The employees, in return for premium pay for overtime, had waived their claims for damages. One of the employees, however, sued for damages. The court on April 29, in the case of *D. A. Schulte, Inc.,* v. *Gangi,* ruled that the waiver of damages by the employees violated the law because Congress intended the right to damages not only as a direct protection of the employee but also as an aid to the enforcement of the law.

"KICKBACKS"

The U. S. Supreme Court on March 25, in the case of the *United States* v. *Carbone, et al.,* ruled that the Federal "Kickback" Act does not apply to union officials who require non-union workers on government projects to pay union initiation fees. It was stated that Congress did not intend that the act should affect legitimate union activities, such as requiring non-union workers to pay fees under closed-shop agreements, or to make the act applicable even to unlawful actions of union officials not connected in any way with "kickbacks." The act was intended to prevent employers from evading wage scales fixed by the Government on its projects by requiring employees to give back part of their lawfully earned wages.

INTERPRETATION OF SELECTIVE TRAINING AND SERVICE ACT

The interpretation of the Selective Training and Service Act by the Selective Service Director was reversed by the Supreme Court on May 27 in the case of *Fishgold* v. *Sullivan Drydock and Repair Corporation.* The decision held that the act did not grant to veterans rights of "superseniority" but was intended only to maintain their rights "within the framework of the seniority system plus a guaranty against demotion or termination of the employment relationship without cause for a year."

ADMINISTRATIVE CHANGES AFFECTING LABOR

The end of the war affected the Department of Labor in a number of ways. The National War Labor Board and the Retraining and Reemployment Administration were transferred to the Department. The termination of the War Manpower Commission was followed by the transfer of the U. S. Employment Service and the Apprentice Training Service back to the Department, after the wartime incorporation of these agencies in the WMC. In July, 1946, the Children's Bureau, with the exception of its Industrial Division, was transferred to the Federal Security Agency. The Industrial Division was retained in the Department as the Child Labor and Youth Employment Branch of the Division of Labor Standards. The National War Labor Board was terminated, but the modified program of controls was administered in the Department by the National Wage Stabilization Board. An executive order of Dec. 12 terminated the NWSB as of Feb. 24, 1947, but provided for continuance of certain functions in the Departments of Labor and the Treasury.

Proposals were made in Congress soon after V-J Day for the transfer of the employment offices of the U. S. Employment Service to the states. The urgency and national scope of reconversion problems growing out of the large-scale shift of war workers to new employments and the placement of the millions of veterans rapidly being demobilized caused a delay in the return of the offices to the states. Congressional action at length required, however, that local operations be restored to state control. The Director of the U. S. Employment Service announced that by Nov. 17 all state programs for operating employment offices had been approved, although in certain cases with reservations, and the transfer occurred on Nov. 18.

A noteworthy post-war development in Department of Labor functions was the reorganization and expansion of the Conciliation Service. During the war, public functions bearing on labor relations had been widely scattered. These functions, other than those of the National Labor Relations Board and the National Mediation Board, were brought together in the Conciliation Service. Labor-management advisory committees were organized to aid the Conciliation Service in its general functions and its technical and analytical services. Similar committees were established on a regional basis, and both the central staff and the field offices were reorganized.

During the depression of the thirties, apprentice training had seriously declined, and the war checked the revival of such training. The Apprentice Training Service of the Department was considerably expanded for the purpose of continuing in modified form some of the wartime training activities, restoring pre-war work in this field, and meeting the vastly expanded demand for skilled workers, especially in the construction field.

A new Commissioner of Labor Statistics was appointed. Some of the activities in the field of research and statistics, which had been transferred to war agencies, were brought together in the Bureau of Labor Statistics.

The Division of Labor Standards established a Labor Education Service. A 10-member labor advisory committee from the AFL and the CIO was appointed. The program includes personal consultative services, on request, to any union, university, labor school, or civic group to aid in the development of a labor education program; a national clearing-house service for information on labor education; and the preparation and distribution of lesson plans and pamphlets.

The appointment of an under secretary and three instead of two assistant secretaries was authorized by Congress. On Dec. 6, 1946, the Secretary of Labor issued an order reorganizing the staff of the department, with a specific allocation of duties and functions, and the Secretary's Staff Committee was formed to tie together the work of the various agencies and to make their services more readily available to labor, management, and the public.

INTERNATIONAL LABOR

Disagreement between the AFL and the CIO continued in regard to representation in the International Labor Organization. The CIO claimed the right of representation at the September convention of the ILO in Montreal, and proposed alternate representation of the AFL and CIO. The decision of the President, as in previous years, was in favor of the AFL, which refused to consider alternate representation; and the president of the CIO declared that, in the judgment of its officials, this action substantially destroyed "whatever remaining usefulness to labor and to the masses the ILO may have had."

A recent development in the work of the ILO took the form of industry committees. Important fields of activity of these committees included coal, steel, shipping, inland transport, and petroleum. Another important ILO change was the agreement between that agency and the Economic and Social Council of the United Nations for coordinating their work and defining their respective fields of activity.

The CIO, as an affiliate of the World Federation of Trade Unions, formed in 1945, took a prominent part in the activities of that organization. The AFL, after the liquidation of the International Federation of Trade Unions, with which it had been affiliated, refused to participate in the work of the WFTU on the ground that the Russian unions and some other affiliates are not "free" unions. The AFL expressed a keen sense of responsibility for the development of "free" unionism throughout the world and continued to maintain connections abroad.

The CIO, through the WFTU, continued its interest in the work of the

Economic and Social Council. The AFL obtained advisory status in relation to the Council equal to that of the WFTU.

The AFL and the CIO, although in disagreement over such questions as ILO representation and affiliation with the WFTU, had common interests in the basic problems of international relations as affecting labor. These common interests were reflected in the initial meetings of the Union Advisory Committee on International Affairs, formed during the year to cooperate with the Department of Labor in the discharge of its responsibilities in the international field.

EMPLOYMENT AND UNEMPLOYMENT STATISTICS

By Irma Rittenhouse
Division of Placement and Unemployment Insurance, New York State

GENERAL

Employment in 1946 was higher than was foreseen by all except the most optimistic. Despite serious labor disputes in basic industries, widespread business hesitation, and continued material shortages, the combined index of industrial production was reported at 185 (1935-39 = 100) in October 1946, as compared to 164 a year earlier. The index of production of durable goods showed a particularly marked increase, from 187 in October 1945 to 215 in October 1946. Non-durable goods production experienced a slightly more moderate gain over the year (from 158 to 174) and in October 1946 was considerably lower than the durable goods index in relation to 1935-39.

After the first check when war production, representing two-thirds of our industrial output, ceased, employment gradually was resumed at a rate about even with the growth of the labor force. The absorption into employment of most of 7,000,000 ex-servicemen and women within a year after V-J Day was an outstanding phenomenon. The year 1946 was characterized by far more concern over labor income in the face of rapidly rising living costs than by concern over employment.

By November 1946, the total civilian labor force was 58,970,000, of whom about 57,000,000 had jobs of some kind. Non-agricultural employment (49,000,000) was at an all-time high and agricultural employment amounted to 7,900,000. (See Table X for details of labor force figures.)

TABLE I

INDEXES OF EMPLOYMENT OF PRODUCTION WORKERS IN MANUFACTURING

(1939 = 100)

	All Manufacturing	Durable Goods Group	Non-durable Goods Group
1943 monthly average....	154.0	193.8	122.7
1945 monthly average....	148.2	186.9	117.8
1946			
January.....	130.2	144.1	119.2
February....	121.9	122.6	121.4
March.......	129.9	138.9	123.1
April........	136.0	151.8	123.5
May........	137.0	154.8	123.0
June........	139.3	158.0	124.4
July.........	140.8	161.0	124.9
August......	145.0	166.2	128.4
September...	146.7	168.6	129.4
October......	146.7	169.4	128.9

As early as January 1946, there were contra-seasonal employment increases in private construction, manufacturing, and mining, owing to the released demand for peacetime goods of all kinds. In trade, the usual seasonal decline occurred. In February, there were unusual further gains in construction and trade employment, and some gains in light manufacturing. Strikes and material shortages caused heavy layoffs in heavy manufacturing, but there were employment recoveries in March when some of the important disputes were settled. By May, non-agricultural employment was at V-E Day levels. By mid-summer, there was a further general increase in employment, the construction industry especially taking on labor at a rapid pace. In August, the first increase in the employment of women since hostilities ended occurred. Employment gains continued into the fall, though by November construction employment had fallen off and some other customary seasonal recessions occurred (Table I).

All regions of the country, though not all individual states, shared in the employment gains in the year after V-J Day. Table II shows the regional changes in non-agricultural employment as estimated by the U. S. Bureau of Labor Statistics.

TABLE II

REGIONAL CHANGES IN NON-AGRICULTURAL EMPLOYMENT, AUGUST 1945—AUGUST 1946

(in thousands)

	August 1946	August 1945
New England	2,945	2,839
Middle Atlantic	8,917	8,775
East North Central	8,591	8,074
West North Central	2,825	2,737
South Atlantic	4,441	4,413
East South Central	1,729	1,667
West South Central	2,422	2,435
Mountain	956	908
Pacific	3,423	3,377

CHANGES IN THE LABOR FORCE

In the year ended August 1946, the civilian labor force had increased by 5,500,000 persons, according to Census estimates. The labor force was increased by 10,500,000 ex-servicemen. On the other hand, within the six months after V-J Day, about 2,000,000 women ceased to be employed. Of the 8,000,000 "extra" workers—women, youngsters and others not usually employed—who had entered the labor force during the war, about 5,600,000 had withdrawn between April 1945 and August 1946.

Because of the high post-war marriage and birth rates, young women aged 20 to 34 left the labor force in large numbers, and, barring a depression that forces them into the labor market, women of this age group are not expected to seek employment at as high a rate as in pre-war years. Women of 35 and over, on the other hand, still exceeded "normal" in the labor force a year after V-J Day, by at least 750,000. This group is not withdrawn from the labor force to any extent by marriage and childbearing, and their status and opportunities in the labor market are still uncertain.

School-age children employed during the war withdrew from the labor market to the extent of 2,600,000 in the year ended August 1946. Although further declines in the number of teen-agers seeking or holding jobs were expected in the fall of 1946, this part of the "extra" labor force was 1,400,000 in August 1946 and may not be much reduced so long as favorable employment opportunities, especially in the summer, persist. Young men in their early twenties, on the other hand, are in the civilian labor force in less than normal numbers, owing to military service and to subsidies for college education under the Servicemen's Readjustment Act of 1944.

Table III shows the changes in the numbers of men and women in non-agricultural employment, as estimated by the U. S. Bureau of the Census, in November 1945 and November 1946.

TABLE III

MEN AND WOMEN IN NON-AGRICULTURAL EMPLOYMENT

(in thousands)

	Week Ended	
	November 10, 1945	November 9, 1946
Total	43,070	49,140
Men	27,510	34,050
Women	15,560	15,090

EMPLOYMENT IN MANUFACTURING

Shipments of durable goods by manufacturers began a precipitous decline in May 1945, levelled off in October-December 1945, and declined sharply in January-February 1946. At the low point in February 1946, they were only about 50 per cent above the 1939 average. Strikes and threats of strikes in early 1946 were the main factors in the decline of shipments. In March, however, a steady upward movement began, and by September the index was on the way up above the October-December 1945 level. Shipments of non-durable goods remained about at 1945 levels during the first three quarters of 1946 but turned upward somewhat in September. In view of peacetime consumer demands, this was a disappointing performance. It was attributable almost entirely to material shortages and to price uncertainties.

These movements were approximately reflected in manufacturing employment (Table I). The U. S. Bureau of Labor Statistics employment reports show a sharp decline in the durable goods index from 186.9 monthly average in 1945 to 122.6 in February 1945, but a steady increase from February onward to 169.4 in October. The index of employment in the manufacture of non-durable goods increased very slowly throughout 1946, with a level of 128.9 reached in October (1939 = 100). Table IV shows employment changes in leading industries of both the durable and non-durable goods groups in October 1945 and October 1946.

TABLE IV

INDEXES OF MANUFACTURING EMPLOYMENT, BY INDUSTRY, OCTOBER 1946 AND 1945

(1939 = 100)

	1946	1945
Total	146.7	127.6
Durable goods	169.4	142.6
Iron and steel and products	145.5	125.2
Elec. machinery	215.9	180.1
Other machinery	206.5	172.1
Transportation equipment, except automobiles	278.7	420.4
Lumber and timber basic products	150.7	113.3
Non-durable goods	128.9	115.7
Textiles and fibre products	107.0	92.4
Apparel and other finished textile products	137.4	117.5
Food	125.7	130.6
Chemicals and allied products	170.5	168.5
Tobacco	95.8	92.2
Printing, publishing and allied industries	120.1	102.5

MINING EMPLOYMENT

Employment in both coal and metal mining was below pre-war levels throughout 1946 (Table V). The bituminous coal strike in April brought production practically to a stop in that branch of the mining industry during the month, and employment went to 20 per cent of the 1939 level. Coal mines operated short-handed during the entire war period, and efforts to bring miners out of military service by arrangement with the War Department did not make up for the labor deficiency. With the end of the war, the threat of the persistent under-employment of normal peacetime years was revived. This long-run problem, combined with a great increase in productivity per man-hour in the last ten years, was the basic factor in the early spring and late fall strikes in the industry for higher wages and various income-protection plans. All branches of mining are heavily dependent, like construction, on the general level of business activity. In addition, coal is the victim of severe competition from other sources of heat and power. The sites of employment in mining are relatively isolated, and there is little opportunity for occupational shifts on the part of mine workers. This combination of circumstances makes the post-war situation in mining one of the critical employment problems of the country. According to the *Monthly Labor Review* (August 1946), peak production in bituminous coal mining was reached in 1943-44; yet the average number of wage earners each year during the war period was as follows:

Year	Average Number of Wage Earners
1940	415,000
1941	407,000
1942	435,000
1943	386,000
1944	354,000
1945	322,000

In pre-war years, the bituminous coal miners could produce all that the country needed, according to the Bureau of Labor Statistics, in 200 working days a year.

TABLE V

INDEX OF EMPLOYMENT IN MINING

(1939 = 100)

	Bituminous	Anthracite	Metals
January	91.2	79.3	76.3
February	92.0	81.1	72.0
March	92.2	81.7	63.1
April	20.1	81.4	58.8
May	69.8	81.0	72.3
June	89.5	79.8	72.2
July	89.3	82.2	74.8
August	90.8	82.0	82.5
September	90.5	82.2	83.5
October	90.1	83.2	83.9

EMPLOYMENT IN CONSTRUCTION

Employment in construction in 1946 responded to the pent-up needs accumulated during the war period for private industrial and commercial building in particular. United States Bureau of Labor Statistics estimates show construction employment 500,000 higher in January 1946 than in January 1945. In March, the total estimated employment was 1,503,300, and by September it had reached 2,302,000, or more than double the employment of a year earlier (Table VI). Federal construction activity played a small part only in this employment change, owing to cessation of hostilities. Private construction expenditures from January to October 1946 were $8,000,000,000 as compared with $2,800,000,000 in the first ten months of 1945, whereas public expenditures (all levels of government) actually decreased from $1,800,000,000 to $1,700,000,000 in the same two periods. Shortages of many types of skilled construction workers were widespread during the year. This industry is probably the most sensitive barometer of general business activity, and is almost entirely dependent on it. Employment was, therefore, expected to increase sharply as soon as war restrictions on construction and repairs were removed, but employment irregularity in the industry springs from variations in demand to a much greater extent than from weather conditions.

TABLE VI

ESTIMATED CONSTRUCTION EMPLOYMENT, SEPTEMBER 1946

(in thousands)

All types	2,302
New	2,002
Private	1,549
Residential non-farm	621
Non-residential bldg.	659
Farm	106
Public utilities	163
Public	453
Federal	237
Non-Federal	216
Minor bldg. repairs	300

EMPLOYMENT IN UTILITIES AND TRADE

As is customary among the utilities, employment remained relatively stable throughout 1946, with the telephone industry showing the highest gain over 1939 employment (Table VII). Employment in trade, although above the pre-war level in August 1946, the highest on record, did not increase at the same pace as employment in manufacturing despite the record year in sales. Employment in trade is normally less responsive to both ups and downs of business than employment in manufacturing, construction, or mining.

EMPLOYMENT ON RAILROADS

The service record of railroads in wartime was exceptional in view of restricted labor supply compared to manufacturing industries. According to the U. S. Department of Labor, the number of passenger-miles and tons of freight doubled in 1939-44,

TABLE VII

INDEXES OF EMPLOYMENT IN UTILITIES AND TRADE

(1939 = 100)

	January	April	July	September
Public utilities				
Electric light and power	92.9	97.7	101.2	101.9
Street railways and busses	123.7	127.0	128.9	129.9
Telegraph	n.a.	119.8	112.4	112.0
Telephone	146.3	163.5	177.7	181.0
Trade				
Wholesale	106.5	106.7	107.5	109.4
Retail	104.1	109.0	106.3	109.8

but the average number of employees increased only 43 per cent:

Year	Average Number of Employees
1939	988,000
1940	1,027,000
1941	1,140,000
1942	1,271,000
1943	1,355,000
1944	1,414,000
1945	1,420,000

It will be noted that the peak in railroad employment was reached in 1945, not in 1943, as in the case of manufacturing.

During 1946, employment on Class I railroads declined somewhat, although in no month was it less than 32 per cent above the 1939 level (Table VIII). The railroads had made considerable use of women workers (though in a limited number of occupations) during the war, and substantial layoffs of women in favor of veterans occurred in 1946. In January 1943, 63,187 women were employed, and a peak was reached in April 1945 with 115,876 women. During the next nine months, the over-all decrease in employment was 2 per cent, but of women workers, 15 per cent. Yet the year 1946 opened with 98,184 women employed, or 55 per cent more than in 1943. Apart from the fluctuations in employment of women, whose permanent attachment to this industry is doubtful, decreases in 1946 were largely in maintenance-of-way and train-and-engine workers, rather than in railroad clerical jobs. Although total layoffs of the wartime labor force in this industry during 1946 were relatively slight, the unemployment insurance records of the Railroad Retirement Board show a slight but persistent increase of claims into the fall of the year, unlike the experience with claims from workers in all other insured industries and among ex-servicemen.

TABLE VIII

INDEX OF EMPLOYMENT ON CLASS I STEAM RAILROADS

(1939 = 100)

	1946	1945
January	141.0	141.1
February	138.4	143.1
March	138.4	144.1
April	136.3	143.8
May	132.4	144.4
June	134.6	147.2
July	136.6	146.9
August	138.8	146.7
September	137.9	143.1
October	139.3	141.4

GOVERNMENT EMPLOYMENT

From the close of hostilities to September 1946, the net reduction in Federal employment was 1,300,000 from a high point of 3,727,474 in September 1945. Not all branches of the Federal Government showed declines, of course; in contrast to heavy reductions in civilian personnel of the Army and Navy and in war agencies, the agencies with a large post-war task, the Veterans' Administration, and the War Assets Corporation, for example, actually added substantial numbers of employees.

The most severe cuts in Federal employment in the first year after the war occurred outside Washington, D. C., where, however, less than 10 per cent of all Federal workers were employed in September 1946. Owing to the sharp declines in Federal employment, estimated total employment by Federal, state, and local governments (excluding Federal force-account construction workers) showed a net decrease in the year after V-J Day, from 5,933,000 in September 1945 to 5,448,000 in September 1946.

AGRICULTURAL EMPLOYMENT

In 1946, according to the U. S. Department of Agriculture figures, the labor supply on American farms was generally adequate. In January, employment was at the lowest point in the 21 years of record, but from that month onward was usually well above employment of a year earlier while the war was still being waged. Work days were shorter in 1946, reflecting the more ample labor supply. By mid-summer, employment was consistently greater than a year earlier and in August reached the highest point since August 1942. By that month also, the return of family workers from military service and war plants was substantial enough to be statistically notable. By November-December, total employment, though down seasonally, was still higher than in the previous year. Good weather conditions helped sustain the high employment levels in agriculture throughout the year.

During 1946 it is estimated that 1,000,000 ex-servicemen found employment on farms. This compensated for the absence of prisoners of war and the lessened number of foreign workers used for peak harvesting periods during the war. During January 1946, 48,000 prisoners of war were still engaged on American farms, but no further reports of their use were made in the analyses of labor supply. Foreign workers (Mexicans, Jamaicans, Bahamians, British Hondurans, and Newfoundlanders) were used in January to the number of 33,000, as compared to the August-September 1945 peak of 88,000. By July, 58,000 were employed, and on Dec. 1, 1946 the number had declined again to 35,298.

Fluctuations in the use of hired *versus* family labor on farms reflect both general business conditions and the degree of "industrialization" of agriculture. Hired labor falls relative to family labor when other job opportunities exist. Yet high wage rates paid by farmers in 1946 attracted a larger number of hired workers than in the last war year. Large-scale farming is the leading explanation of concentrations of hired labor, and thus there has been a continuous upward trend in its use during the past ten years on the Pacific Coast. A notable development during the year was the introduction of the cotton-picking machine in the South, which is expected greatly to change the pattern of farm employment in that area and result in a flow of labor to industrial regions. The Department of Agriculture (Bulletin *Farm Labor*) has compiled the indexes in Table IX, showing the levels of hired and family labor in different areas of the country as compared with the 1910-1914 period.

TABLE IX

TYPE OF LABOR BY TYPE OF FARMING AREA

(1910–14 = 100)

	1946	
	Family	Hired
Corn area	87	47
Eastern dairy	78	72
Western dairy	94	60
Middle eastern	86	57
Eastern cotton	67	78
Delta cotton	89	77
Western cotton	82	93
Small grain	97	63
Range	124	91
Northwestern	129	131

UNEMPLOYMENT

Unemployment, as measured either by the United States Census surveys or by unemployment compensation claims, began to shrink in volume in the early spring of 1946, after the first impact of post-war layoffs and demobilization. Shortages of basic materials needed for peacetime production, hoarding of products, and slow-downs by business management in a struggle against price control and wartime taxes, as well as major labor disputes, were characteristic of most of the year and caused unemployment and under-employment to be greater than the post-war civilian demand for goods would have indicated. By the end of the year, however, the main economic causes of unemployment were the customary. seasonal influences, continued shortages of material, and business uncertainty as to the direction of price movements after the removal of government controls.

The composition of the unemployed population had changed radically from a year before. In place of recently discharged servicemen and ex-war workers of the younger and middle-age groups, with a disproportionate number of women workers, the unemployed in the latter part of 1946 consisted to a considerable extent of workers of both sexes over 45 years of age, already feeling the effect of peacetime selectivity in hiring, and new entrants to the labor market, both veterans and non-veterans, who lacked work experience. Reports from New York, for example, showed that unemployment benefit claimants of both sexes, who were exhausting their benefit payments in December 1946 (*i.e.*, had remained without work for six months), were largely over 45 years of age or had physical defects or personality characteristics that made them hard to place in the peacetime employment market. This problem of "economic old age" is the more serious because of the clear-cut tendency for the labor force as a whole to contain a growing proportion of older workers. In December 1945, 38 per cent of the labor force was over 45. Of women in the labor force, 26.4 per cent were 45 or over.

Apart from these workers who were having long-term difficulties in finding employment, unemployment during the year was largely of the short-term kind normally experienced in peacetime. One further factor affecting labor mobility and consequently the matching of the worker to the job, however, was the general housing shortage. This inhibited to some extent the movement of unemployed workers to places where job openings existed.

The U. S. Bureau of the Census, Commerce Department, provides monthly estimates of the labor force based on a cross-section survey. The concepts of employment and unemployment used are peculiar, and the data must be interpreted with caution. Persons are counted as employed if they "have a job" even though they are laid off during the Census week for less than 30 days or are working short time. Persons engaged in incidental unpaid family work, on the other hand, are counted as "not in the labor force." The data thus actually represent a measure of the amount of part-time and full-time work being provided in general ("employment") in contrast to the number of job-seeking workers who are surplus because they have no employment attachment ("unemployed"). The data are also subject to some bias because of possible subjectivity of replies; the information is gathered by means of inquiries addressed to a sample of housewives. Nevertheless, these monthly estimates represent a substantial step forward

TABLE X

ESTIMATED LABOR FORCE AFTER V-J DAY

(in thousands)

	November 3–9, 1946	November 4–10, 1945
Total, including armed forces	60,980	62,410
Civilian labor force	58,970	53,190
Employed	57,040	51,450
At work, full or part time	55,540	49,740
With a job but not at work	1,500	1,710
Unemployed	1,930	1,740
Not in labor force	45,860	43,390

in analyzing labor force patterns. Table X compares the labor force two months and 14 months after V-J Day.

These estimates show 1,930,000 without a job in the first week of November, but 11,150,000 either totally unemployed or employed for less than 35 hours in that week. A certain proportion of this larger group, not specified by the Census surveys, were of course voluntary part-time workers.

INSURED UNEMPLOYMENT AND INSURANCE CLAIMS

The unemployment insurance programs (veterans, railroad workers, and workers insured under state laws) cover both partial and total unemployment of an involuntary character. Except for railroad workers (covered under a single national system), insured unemployment showed a steady and sharp decline from the post-war peak reached in February-March 1946. By the end of the year (Nov. 16) a total of only 1,872,000 claims was reported nationally from all three groups. The peak had been reached in the week ended March 2 with 3,662,000 claims.

Insurance claims include not only workers on involuntary short time but also workers who "have a job" but are temporarily laid off. They exclude, on the other hand, farm workers, government employees, employees of charitable and educational institutions and, in many states, employees of small firms. The differences in definition make comparability with the Census data unfeasible. The insurance claims data reflect involuntary unemployment more accurately than the Census figures and are most useful as a direct measure of unemployment of labor.

UNEMPLOYMENT IN THE STATES

Marked changes in the post-war impact of unemployment occurred in the various states, reflecting in part the various statutory limitations on benefits which affected war workers in particular, but also measuring the employment recovery. Thus, in the third week after V-J Day, Michigan and Rhode Island had the highest ratios of continued claims (*i.e.*, of more than a week or two in duration) to 1945 employment, with 14 and 9.5, respectively. By January 1946, the West Coast States, the Middle West, New York, New Jersey, and Connecticut were experiencing relatively heavy levels of unemployment. By November 1946, however, the highest rate of unemployment (as compared with 1945 employment) was reported from Washington, with only 6.4 per 100. The only other states with a ratio above 4 per 100 were California, Oklahoma, Missouri, New York, and New Jersey. The national average rate was only 3 per 100.

VETERAN READJUSTMENT ALLOWANCES

Much attention was directed during the year to readjustment allowances received by ex-servicemen, and severe criticisms of the "52-20 Clubs" (52 weeks of benefit at $20 per week) appeared in the press. Official reports indicate that three outstanding causes of criticism are: (1) delays in adjustments to peacetime working conditions by young veterans; (2) local laxity in administering the statute as a true unemployment insurance measure and viewing it as a "bonus" measure; (3) resistance to hiring ex-servicemen because of their lack of recent industrial or business experience.

The curve of claims by ex-servicemen, however, shows a steady and precipitous decline from March 1946, when the impact of demobilization was at its height, to November 1946, a decline more sharp than that of non-veteran claims. The largest amount of registered unemployment among ex-servicemen was 1,784,000 in the week ended March 23, 1946. From November 1945 to March 1946, veterans accounted for about three-quarters of the unemployed. By Nov. 16, 1946, the number of unemployed ex-servicemen had dropped to 931,000, a low fraction of 13,000,000 demobilized men and women.

XVI. LABOR AND LABOR LEGISLATION

CHILD LABOR

By Louise D. Stetter
National Child Labor Committee

CHILD LABOR FACTS AND FIGURES

The sharp decline in the employment of school-age children, which was expected to follow shortly after the end of the war, did not materialize. The Bureau of the Census estimates that by April 1945 there were 3,500,000 young people between 14 and 18 years of age at work full or part time, and that this number had declined only to 2,250,000 by April 1946. Therefore, almost one year after V-E Day there were still over twice as many minors 14 through 17 years of age at work as there were in 1940 and, although there is no official estimate of the thousands under 14 years of age known to have been a part of the labor force during the war years, they must be taken into account when considering the child labor picture.

The reduction in the number of working minors estimated by the Census Bureau is considerably less than would be expected from the decreases reported in the issuance of work permits. These reports, though incomplete and scattered, provide the most reliable evidence of the extent to which young people are going to work for the first time in the industries for which permits are most frequently required, namely, the manufacturing and distributing industries. Available figures from cities in various sections of the country show substantial decreases in the number of permits issued in 1945 or 1946 as compared with similar figures for the previous year.

In Rhode Island the number of permits issued to children of 14 and 15 years of age in 1945 was 23 per cent less than those issued in 1944. In North Carolina, from a peak of 11,000 permits issued to minors between 12 and 18 years of age in June 1945, the total had dropped to 2,920 in December and to 1,628 in February 1946. There were 14,118 fewer boys and girls 14 to 18 years of age working full or part time in Philadelphia in January 1946, than in January 1945, when the number was 29,311. In spite of this drop there were still six times as many young people employed in Philadelphia in the early part of 1946 as in 1940. In Salt Lake City 9,613 employment certificates were issued during the year 1944-45 and only 6,754 in 1945-46. Certificates totaling 30,488 were issued to minors between 14 and 18 years of age in Illinois in 1945, a decrease of 3,800 from the 1944 total. Employment certificates issued to minors 14 to 18 years of age in New York State totaled 128,193 for the first four months of 1945, and dropped to 80,065 for the same period of 1946.

Since employment certificates are seldom required for domestic service or agricultural work and are often not required for the service trades which employ many children, the permit figures do not reflect the extent of employment of young people in these two occupation groups, nor do they reflect the numbers of minors employed in part-time and summer vacation work for which permit requirements are often ignored or do not exist. From these facts it is logical to conclude that the first reduction in child employment after V-E and V-J Days was considerably greater for full-time work in industrial establishments than for work in service trades and agriculture.

SCHOOL ATTENDANCE AND YOUTH EMPLOYMENT

While youth employment was increasing during the war years (1940-45), high school enrollment decreased by 17 per cent. Some of this decrease was caused by the entrance of young people into the armed forces and some by the decrease in the general population group, but the chief contributing factor was the entrance of young people of high school age into the labor force. The drop in enrollment was checked in the fall of 1945 but so far there is no evidence of an increase in high school enrollment corresponding to the decrease in the issuance of work permits. This is another indication that large numbers of young people are still at work and that few who left during the war years have returned to school. Not all of them still have jobs for already, in some places, unemployment of young people has become a problem. As adult labor becomes more plentiful. employers' requirements in terms of education and experience become more stringent, and young workers find it increasingly difficult to locate employment except in the least desirable and poorest paid jobs.

Recognizing the fact that many wartime child labor problems are continuing and new ones arising, the National Commission on Children and Youth, an outgrowth of the National Commission on Children in Wartime, is emphasizing the need for job placement services, skilled employment counseling, programs of combined school and work, and other services to assist prospective young workers in their hunt for suitable employment.

PROBLEM OF KEEPING MINORS IN SCHOOL

The National Child Labor Committee, in addition to working for laws which will bar all employment during school hours for children under 16 years of age, for the elimination of exemptions for children under 16 in compulsory school attendance laws, for regulation of the type and amount of employment which school-age children are permitted to undertake in addition to their school work and for better enforcement procedures, has turned its attention to the question of what kind of educational programs are needed to interest young people in remaining longer in school. The Committee undertook, in 1945, a study of one type of program—part-time school and work under school supervision and control. These programs were developed in a number of school systems during the war with the immediate objective of enabling the students to assist in the war effort without leaving school or working long hours after school.

Some of the schools used the opportunity to test the educational values of a controlled work experience for students whose needs are not met by the regular curriculum. A report of this study, based on field visits to cities having representative work-study programs under school supervision, was published in 1946 and has attracted the interest of many educators. In considering the continuance and future development of these programs the report suggests: "(1) That such programs, if they are to be continued will need careful evaluation and the adoption of definite procedures and safeguards that could not always be provided in the many rapidly developed, and often large-scale, programs that were set up under wartime pressures, and (2) that such programs, though they should not be regarded as the solution of all the problems in secondary education, may become one of the many resources that will be developed and provide more meaningful educational experience for secondary school students than the usual school curriculum now does."

There is an increasing awareness among educators that changes in the high school curriculum have not kept pace with changing requirements and interests of the student bodies. An intensive study of a large number of young people who have dropped out of school, to determine the real factors that prompted their withdrawal, and what changes in the school programs might have encouraged them to remain in school, is needed. The extent of school drop-outs is considered by many educators to be the major problem in secondary education today. It is also a major child labor problem, since discontent with school brings a large number of school-leavers, with little preparation for employment, into the labor market every year.

AGRICULTURE AND CHILD LABOR

Because most child labor and school attendance laws specifically exempt work in agriculture and domestic service from their provisions, employment in these occupations accounts for the largest number of children who are out of school for work. These are the children whose loss of schooling and whose long working hours will not be reduced until legal provisions for their protection are enacted. Extension of Federal and state child labor laws to include children employed in commercialized agriculture was one of the most important phases of child labor legislation on which activity had to be suspended during the war years, and upon which immediate and concerted effort is now needed. Both the National Conference on Labor Legislation and the Children's Bureau General Advisory Committee on the Protection of Young Workers emphasized this need at meetings held in 1946.

The concern over the wartime increase in the agricultural employment of young people was accompanied by renewed interest in improving the working and living conditions of migratory farm families and their children. Conditions in migrant labor camps were conspicuously inferior to those in the camps provided during the war for workers recruited from the West Indies. Migrant families are becoming more numerous because, as reconversion proceeds and farmers' needs for labor continue undiminished, migrants who found other work in the war years are returning to agricultural labor. Unless legal measures are taken to enable the children of migrants to attend school until they are old enough to work they will continue to work when other children are in school and under the worst possible conditions. Legal measures must also be taken to require the improvement of living conditions in migrant labor camps.

ACCIDENTS TO MINORS

The number of accidents to minors increased greatly with the increased employment of young people during the war. Though still heavy, it has decreased somewhat since the war's end. During 1945, in Illinois, 1,752 minors under 18 years of age received compensation for injuries received on the job, an 18 per cent decline from the 2,146 reported in 1944. The corresponding 1940 figure was 282. In the first six months of 1941, there was 78 compensable injuries to minors under 18 reported by the Michigan Department of Labor and Industry. For the same period of 1945 the figure for such injuries rose to 410 and for the first six months of 1946 dropped to 240.

Regulations prohibiting the employment of minors under 18 years of age in occupations declared to be hazardous are included in the provisions of the Fair Labor Standards Act. A new Order, which became effective September 1, 1946, added the operation of power-driven, hoisting machinery (including elevators) to the occupations previously declared hazardous. The previous six Orders, and the Advisory Standards for hazardous occupations issued by the Children's Bureau during the war, in lieu of new Orders, played an important role in the protection of young workers from hazards in many war industries. In the future, hazardous occupations Orders will be issued by the Secretary of Labor instead of by the Chief of the Children's Bureau (see paragraph Children's Bureau Transfer).

STATE AND FEDERAL VIOLATIONS

Reports of state and Federal inspectors show that violations of child labor laws continue to be high. Children found employed in violation of the Fair Labor Standards Act, during the last six months of 1945, totaled 3,787, more than four times the number for the corresponding period of 1940, about the same as in 1943, and somewhat fewer than in 1944. Although figures are not available for all the states, those which are available are significant. Inspectors of the Alabama State Department of Industrial Relations found 662 violations of the Child Labor Law in the first nine months of the fiscal year 1945-46 as compared with 926 for the same period of the previous year. During 1945 there were 229 complaints alleging illegal employment of minors under 18 filed in the San Diego office of the California Labor Commissioner. There were 313 similar complaints filed in 1944. In North Carolina the Labor Department found 1,663 violations of the Child Labor Law during February, March, and April 1946, while there were 1,949 such violations found in the same months of 1945.

CHILDREN'S BUREAU TRANSFER

In accordance with the terms of the President's Reorganization Plan #2, the Children's Bureau was transferred from the Department of Labor to the Federal Security Agency in July 1946, with the exception of the Industrial Division. This Division, which administers the child labor provisions of the Fair Labor Standards Act, was retained in the Department of Labor where it was transferred to the Division of Labor Standards and renamed the Child Labor and Youth Employment Branch. In announcing the latter transfer, Secretary Schwellenbach said that, in addition to the child labor functions, "the new Branch will be expected to promote better working conditions for minors, develop and promote standards for their employment protection, and measures for advancing their opportunities for suitable work."

STATE LEGISLATION

The outstanding legislative gain in 1946 was made by Georgia which enacted a new child labor law establishing a 16-year minimum for employment in factories and certain other mechanical establishments at any time and for all employment, except in agriculture or domestic service, during school hours. This complements the 16-year compulsory education law passed by Georgia in 1945.

Another major achievement was the enactment of the Massachusetts law which makes a beginning toward regulation of agricultural work by forbidding the work of children under 14 on farms for more than four hours a day or 24 hours a week. New York extended until July 1, 1947, the provision which requires minors between 14 and 16, working in farm service, to obtain farm work permits, and also the provision which permits the release of school pupils for planting and harvesting.

In Louisiana, Virginia, and New York revisions were made in the street trades sections of the child labor laws. Louisiana made permanent the wartime provision which sets a minimum age of 12 for boys delivering and collecting newspapers over fixed routes in residential areas, though early morning work was prohibited by limiting delivery to afternoon papers, and Sunday morning delivery was permitted but boys under 14 may not begin work before 6 a.m. The Virginia provision lowered the hour standards for boys between 14 and 16 delivering newspapers by permitting them to begin work at 5 a.m., instead of 6 a.m., but strengthened another provision by providing for the issuance of certificates, limited to those physically fit, rather than street trades badges to newsboys. The certificates are good only as long as the boy's school record indicates that school and work are compatible. New York took the reverse action by doing away with the previous requirement of a thorough physical examination by a physician for street trades badges. A new section requires only that the school physician or nurse or the minor's physician issue a statement indicating that the minor is in sound health and is physically qualified to engage in a street trade.

The establishment of cooperative school and work programs in New York's public schools will be stimulated by the new law which provides that, when state aid is apportioned to each school district maintaining part-time cooperative or apprentice training schools, the days spent in employment by the pupils attending such schools shall be considered as days spent in school and shall be counted when the average daily attendance is computed. Kentucky strengthened her school attendance law by increasing the minimum school term from seven to eight months.

SERVICES AND PUBLICATIONS

The National Child Labor Committee (419 Fourth Avenue, New York 16, N. Y.) offers information on child labor conditions including changes needed in the provisions and administration of child labor and compulsory school attendance laws. It cooperates in drafting and procuring the passage of legislation, publishes educational material, and carries on activities to promote better educational and employment opportunities for youth.

In 1945-46 the National Child Labor Committee issued the following publications: *The American Child* (published monthly, October through May); *Annual Report* for the Year ended Sept. 30, 1946, by Gertrude Folks Zimand; *State Child Labor Compulsory Education and Related Legislation—1946*, by Louise D. Stetter; *Look Before You Leap* (addressed to young people who are thinking about leaving school to go to work), by Lazelle D. Alway; *Margin for Living—The 40 Hour Week*, by Florence Taylor; *Work Experience in Secondary Education: A Study of Part-Time School and Work Programs*, by Harold J. Dillon.

PERIODICAL PUBLICATIONS

American Child, The
419 Fourth Ave., New York City.

American Federation of Labor Weekly News Service
901 Massachusetts Ave., N.W., Washington, D. C.

American Federationist, The
901 Massachusetts Ave., N.W., Washington, D. C.

C.I.O. News (National Edition)
1106 Connecticut Ave., N.W., Washington, D. C.

Conference Board Management Record, The
247 Park Ave., New York City.

Economic Outlook (C.I.O.)
1106 Connecticut Ave., N.W., Washington, D. C.

Employment Service Review
United States Employment Service, Department of Labor, Washington, D. C.

International Labour Review
International Labour Office, Montreal, Canada.

Labor (Sponsored by 15 railroad unions.)
10 Independence Ave., S.W., Washington, D. C.

Labor Information Bulletin
Department of Labor, Washington D. C.

Labor and the Nation
Inter-Union Institute for Labor and Democracy, 112 E. 19th St., New York City.

Labor's Monthly Survey (A.F.L.)
9th and Massachusetts Ave., N.W. Washington, D. C.

Monthly Labor Review
Bureau of Labor Statistics, Department of Labor, Washington, D. C

Social Security Bulletin
Social Security Board, Federal Security Agency, Washington, D. C

Survey Graphic, The
112 E. 19th Street, New York City

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Federation of Labor, American Federation of Labor Bldg., 901 Massachusetts Ave., N.W., Washington, D. C.

American Labor Education Service, 1776 Broadway, New York City.

Congress of Industrial Organizations, 718 Jackson Pl., N.W., Washington, D. C.

nternational Labor Office (Washington Branch), 734 Jackson Place, N.W., Washington, D. C.

Inter-Union Institute for Labor and Democracy, 112 E. 19th St., New York City.

National Child Labor Committee, 419 Fourth Ave., New York City.

Railway Labor Executives Association, 10 Independence Ave., S.W., Washington, D. C.

DIVISION XVII

RELIGION AND RELIGIOUS ORGANIZATIONS

INTERDENOMINATIONAL ACTIVITIES

By Preston King Sheldon
Editor and Writer

CONCERN WITH WORLD PEACE PROBLEMS

The release of atomic bombs in the Second World War had by 1946 startled a large part of the religious world out of a somewhat neutral, if not irresponsible, attitude toward the problem of establishing peace in the world. Increased anxiety concerning the war problem was noted on every hand. Emphasis was intensified in study and action groups in America in behalf of better understanding among all races and freedom for all creeds and peoples. In every phase of social life, economic and political, religious leaders delved into problems, studied them, and made pronouncements. Work among minorities was particularly noticeable, but a fraternal spirit was called for to reach through all social levels as the important first step toward peace. In addition to promoting projects through education, which were intended to help solve human problems, church organizations called directly upon government officials or informed them by written statements as to their attitudes on public questions. This was particularly true of problems of the United Nations.

International control of atomic energy was prominent among the demands. Standing at the head of actions among religious groups must be placed that of a conference called by the World Council of Churches and the International Missionary Council in Cambridge, England, in August, 1946, in an effort to map global strategy for the maintenance of world peace. As an outcome, the Council, which in addition to representatives of Protestants in 15 countries, included representatives of Eastern Orthodox churches, announced a determination to implement its voice in international problems through a Commission of the Churches on International Affairs set up at Cambridge. It was given the task of mobilizing political support for peace aims in consonance with Christian principles. Ways were to be sought by which Christians might be brought into contact with the United Nations and other international organizations. A charter was adopted which was intended for ratification by the respective constituencies as a priority over all other tasks. Fear of war in the immediate future was registered in the thinking and speaking of several churchmen among the 60 at Cambridge. The seriousness of the problems in international affairs was seen as calling for all churches to bend themselves to the job of creating a will to peace. The Commission was asked to encourage the forming of local commissions by the churches in liaiso with the larger effort. The Interna tional Missionary Council joine forces with the World Council o Churches in assuming responsibilit for administering the Commission' program.

The Commission was to be com

posed of some 30 churchmen from 18 nations of whom five were chosen from the United States, as follows: John Foster Dulles; Bishop G. Ashton Oldham of the Episcopal Diocese of Albany, N. Y.; Bishop G. Bromley Oxnam of the New York City Methodist Area; Reinhold Niebuhr of Union Theological Seminary; and Dean Virginia Gildersleeve of Barnard College.

In the preamble to a statement, the conference in Cambridge declared: "The nations are faced with the necessity of political action of unprecedented gravity." The conclusion was in part that "we must avoid every action which might increase the mutual distrust which threatens the peace of the world."

ECUMENICAL INSTITUTE IN SWITZERLAND

An Ecumenical Institute, made possible through a gift of $1,000,000 by John D. Rockefeller in 1945, part of which was allocated for the purpose, was opened in October, 1946 at Celigny, Switzerland, in the Chateau de Bossey, which had been used by Mount Holyoke College before the Second World War to accommodate personnel and students in courses given in connection with the Women's College of Geneva. The Institute was established to train young leaders in religious work under the guidance of the World Council of Churches. It had 60 students from war areas in Europe and Asia when it opened.

RELIEF ACTIVITIES

The Provisional Committee of the World Council of Churches held its first post-war meeting in February in Geneva with representatives from allied and ex-enemy countries and urged the Allied governments and the United Nations to take steps to provide food relief for populations transferred in conformance with the Potsdam proposals and to oversee proper settling of such populations in new surroundings. It also urged the General Assembly of the United Nations to carry forward relief work that was to be dropped when the UNRRA was discontinued. Five presidents were elected to hold office until the first World Assembly of the World Council of Churches in 1948. They were the Archbishop of Canterbury, Marc Boegner of France, Archbishop Germanos of the Eastern Orthodox Church, Archbishop Eidem of the Church of Sweden, and John R. Mott. Dr. Mott, a founder of the Foreign Missions Conference of North America and president of the World's Alliance of Young Men's Christian Associations, was named co-winner of the 1946 Nobel Peace Prize and honored at a testimonial dinner in New York City in December at which Bishop G. Bromley Oxnam, former president of the Federal Council of Churches of Christ in America read tributes from public leaders in many countries.

The World Council of Churches reported that, by the end of 1946, a total of 96 denominations in 33 countries had joined, an increase of eight new bodies. A drop of one was noted as the result of a merger, and one of the smaller bodies withdrew.

CHURCH WORLD SERVICE

Consolidation of three overseas agencies of American Protestant churches took place in May, 1946, when the former Church Committee on Overseas Relief and Reconstruction, the Commission for World Council Service, and the Church Committee for Relief in Asia united to become Church World Service. Harper Sibley was chosen president and Dr. A. Livingston Warnshuis executive vice-president. It was estimated that the next four years following the merger, at least $50,000,000 in money and contributed supplies for overseas relief and rehabilitation would be sent out through denominational channels, and a similar amount would go through Church World Service channels. A total of more than 10,000,000 pounds of "goods in kind" was reported in September as shipped overseas during the first post-war year of interdenominational Protestant relief. The estimated value was $4,768,108. The shipments went to 29 countries.

A total of $12,000,000 was being sought by Church World Service as the year drew to a close, to finance 1947 foreign relief operations.

SPECIAL FEDERAL COUNCIL MEETING

Reporting on atomic warfare at a special meeting of the Federal Council of the Churches of Christ in America in Columbus, O., March 5-7, 1946, a commission of 20 religious educators characterized use of atom bombs as "irresponsible" and likely to produce greater irresponsibility if not stopped. "We are agreed that the surprise bombings of Hiroshima and Nagasaki are morally indefensible," they stated. With the exception of one section, which called for civilian control of atomic research, which was adopted, the report was referred to the executive committee.

President Harry S. Truman in an address given personally called on the Church to realize its "supreme opportunity" at once to achieve its mission. He said that "The Protestant Church, the Catholic Church and the Jewish Synagogue, bound together, must provide the shock forces to accomplish" moral and spiritual awakening. "Unless it is done," he added, "we are headed for the disaster we would deserve." The special meeting was attended by 500 representatives of 27,000,000 Protestant church members.

DR. NIEMOELLER IN THE UNITED STATES

The Council's biennial meeting was convened in Seattle, Wash. Dec. 4-6. The high point of the sessions was an address by Martin Niemoeller, militant German Lutheran pastor, who had arrived for a speaking tour. His tour was challenged by Mrs. Franklin D. Roosevelt in her newspaper column "My Day" while the biennial meeting was in session. A telegram was therefore sent immediately from the assembly of delegates, expressing regret over her criticism. The telegram declared she had been misinformed as to incidents connected with Niemoeller's offer to join the German Navy in the Second World War. Mrs. Roosevelt, in her column, mentioned having heard of this offer and that it was her understanding Niemoeller resisted the Nazis merely because of "what they did to the Church, but that he had no quarrel with them politically." It was acknowledged by himself among his friends that the offer had been made, but he explained his purpose as a desire to help overthrow Hitler and that he was seeking to gain his freedom by an offer to serve in the navy as he had in the First World War.

THE COUNCIL AND UN

A telegram was also sent to Senator Warren Austin, head of the United States delegation of the United Nations, among other things asking "our government to advocate policies which will bring into force at the earliest possible moment the trusteeship provisions of the Charter." Multilateral control or inspection under an appropriate agency was favored for the Japanese mandated islands. In view of the coming end of UNRRA, the Federal Council's delegates also urged the Federal Government to take steps to replace its work with "such arrangements with other countries, in supplying their needs for food, as will help to reestablish their independence at the earliest possible moment, stimulate their economic recovery and strengthen the ties of international friendship in such a way as to undergird world order and peace." The Council also committed itself "to the principle that relief of human suffering must not be used for political ends." Commendation was given to the United States Senate for "appointing a committee to investigate charges such as are brought against Senator Bilbo of Mississippi," . . .

CONSCIENTIOUS OBJECTORS

A recommendation on behalf of the welfare of released conscientious objectors was made, along with reaffirmation of "gratification with the recognition accorded conscientious objectors to war under the Selective Training and Service Act of 1940." The statement of the Council added: "We express again our desire that the work of the conscientious objectors shall be utilized to the maximum social advantage; that religious and social organizations should have access to the services of qualified civilian public service assignees who may seek work with such agencies; that conscientious objectors should be permitted to engage in programs of relief and rehabilitation at home and abroad." Earlier in the year, the executive committee of the Council sent an appeal to President Truman for the proclamation of a general amnesty for conscientious objectors still in prison. The Council supported this in Seattle. Also the Council's committee in charge of their problems issued a booklet in the Spring to aid local church leaders in helping returning conscientious objectors become resettled under peace conditions.

THE FEDERAL COUNCIL AND LABOR

The Labor Day message of the Federal Council of Churches emphasized as "indispensable to the realization of the common good," that there be "an annual income adequate for a worthy standard of living; an economy of high production and full employment; the provisions of decent housing and assured medical care; equal access to employment regardless of race and creed and the wider distribution of property and income and power." Labor and management were called on to give precedence to the common good. Admitting of a larger number of displaced persons to the United States was urged by an executive committee statement in September. This was in support of President Truman's "announced intention to seek liberalization of immigration regulations to cope with resettlement needs." An appeal for support of this move was also made at Seattle by the Council. Another appeal was made to all communities to join in an effort to reduce the divorce rate, noting that in 1945 there had been one divorce in every three marriages in the United States. This went out from the executive committee in October.

DR. CAVERT'S REPORTS ON GERMANY

Julius Bodensieck, of the Wartburg Theological Seminary in Dubuque, Ia., was chosen by the Federal Council of the Churches of Christ in America in September, to succeed Samuel McCrea Cavert, general secretary of the Council, as a permanent Protestant liaison representative between the American Military Government in Germany and the German Church, under a plan authorized by the President of the United States and the Secretary of War. Dr. Cavert had been in Germany for a month, starting July 7, 1946, serving as liaison representative under a temporary arrangement. He gave a second report on his return, having given a brief one to the bi-monthly meeting of the Federal Council's executive committee on March 19, following his return from a previous six months' stay in Europe. On his earlier trip he worked with the Provisional Committee of the World Council of Churches in Geneva. Switzerland. which he had termed "the most hopeful thing on the European horizon." He discussed this trip in April at a luncheon of the American Committee of the World Council of Churches in an address. He expressed a belief that future activities of the World Council could be depended upon to improve post-war relationships.

His later report was made to the executive committee of the Federal Council in September. He said that "the main impression with which I return has to do with the necessity for a better understanding of the German situation on the part of the American people. When they thoroughly understand the situation I am convinced that American public opinion will support a constructive policy of humane and considerate treatment of the German people." As to the relation of the American Military Government with church life in Germany, Dr. Cavert explained that it came "into the religious situation only at those points at which the Church exercises functions and has relationships of a secular character; more specifically, functions and relationships which impinge upon the sphere of the State. Among those problems which involve Church-State relations are the administration of the property of the Church, the financing of the work of the Church, legislation affecting the Church, and the program of religious education in so far as it is tied up with the general educational program of the community." He told of the services outside these needs which fell into the special province of the liaison representative from American churches and emphasized the importance of meeting them, such as training of ministers, winning the loyalty of young people to the Church; the Christian social program of the Church; and the place of the German Church in the ecumenical movement. He completed arrangements with Lieut. Gen. Lucius D. Clay, deputy military governor in the American zone in Germany, for the performance of services by the liaison representative of the Federal Council who was to come later. Dr. Cavert also announced the World Council of Churches was working on plans to have similar representatives in the American and also the British zones of occupation in Germany. He reported having seen about 50 pastors on his trip.

AMERICAN-SOVIET RELATIONS

Another sphere of international relations where the Federal Council took care to make a pronouncement was that of Soviet-American relations. The Commission on a Just and Durable Peace published a lengthy statement in October in which it was declared: "War with Russia can be avoided and it must be avoided without compromise of basic convictions. . . . Marxist communism in its orthodox philosophy stands clearly opposed to Christianity. . . ." Nevertheless, the statement continued, "We are convinced that a dynamic and fruitful peace can prevail in a world society where conflicts of faith are unavoidable."

Stating the concern of Christians in America for "the progressive realization of the dignity and worth of man in every area of life, political, economic, social and religious, to the world-wide achievement of man's individual freedom, under God, to think, to believe, and to act responsibly according to the dictates of his own conscience," the statement continued: "Within the Soviet Union there are many people who share such Christian beliefs. Moreover, communism as an economic program for social reconstruction, has points of contact with the social message of Christianity as in its avowed concern for the underprivileged and its insistence on racial equality." It described, as points of difference, the atheistic base of the communistic philosophy, its utopian philosophy of history, and its revolutionary strategy, the latter involving "the disregard of the sacredness of personality which is fundamental in Christianity." The statement declared, however: "People everywhere must recognize that differing beliefs and practices are normal in world society, now and in the future. Also, they must see that those who hold beliefs firmly will seek to propagate them without dilution or compromise. There is a widespread feeling that if different beliefs and institutions come internationally into competitive contact, armed conflict is inevitable. That is why some identify world peace with world conformity. Others seek peace in terms of zones of influence which would insulate one faith from another. When neither attitude is practical, as is the case today, they become obsessed with fear. . . . Such attitudes account for much of the danger in the present situation."

The statement called for an end to intolerance and armaments, and called for international cooperation and a more intimate association of the American and Russian peoples, in which they would collaborate in scientific, economic, cultural, and religious problems. A demonstration of democratic practices by democracies was seen as "the surest way to relieve the competitive strain." Courteous and frank discussion of issues and attempts to harmonize divergent points of view through the United Nations were urged.

In connection with the field of Soviet-American relations, Ralph W. Sockman, chairman of the executive committee of the Church Peace Union, and Louie D. Newton, president of the Southern Baptist Convention, spent four weeks in Russia in the summer of 1946, as members of a delegation of the American Society for Russian Relief. They returned and reported on religious life in the Soviet Union and that they had visited churches and talked with many religious leaders. "So far as we were able to observe, there is freedom of religious worship," they reported, after a trip of more than 5,000 miles by air within the Soviet Union. They stopped at many cities. "All the ministers and other religious leaders with whom we talked assured us that there was no governmental censorship of the pulpit. Of course the pulpit does not conceive its message to cover certain social aspects which our American ministers discuss. However, the churches do have their own philanthropies and may present petitions for the redress of any community problem.

"The Russian religious leaders with whom we spoke stressed strongly the separation of Church and State. Both government officials in charge of church relationships and ecclesiastical leaders with whom we spoke agreed that church membership is growing. Certainly we had ample evidence of religious interest in the crowded churches which we visited and in the long queues of people awaiting admission so that they might join in church services. On several occasions, we were given an opportunity to extend greetings to the worshippers at churches, including Jewish congregations. . . . We found a number of churches making improvements to their buildings, an indication, we feel, of the forward strides of religious faith in Russia."

THE CHURCHES IN AMERICA

During the five years ended Oct. 25, 1946, the number of state and local councils of churches in the United States of America had grown from 247 to 634, or more than double, and the combined budgets had been tripled from $1,800,000 to $6,100,000, according to a report to the Intercouncil Field Department of the Federal Council of Churches. A substantial gain was noted in the field of women's groups because of the organizing in 1941 of the United Council of Church Women. The total of local women's councils was at that time 375, and at the end of five years it had grown to 1,400. In 1942 there were 15 state councils, in 1946 they had risen to 41, with four additional states in process of organizing.

In connection with the publishing of the five-year report, a detailed additional report covering 19 months was submitted which disclosed that new councils had been established with full-time executive leaders in that period in 16 cities and councils with voluntary leaders in 12 local areas. Steps were being taken to organize others in 23 more cities.

A group of surveys over a 2½-year period conducted under the auspices of the Committee for Cooperative Field Research of the Federal Council of Churches and the direction of H. Paul Douglass, disclosed trends toward greater cooperation in several metropolitan areas among churches in federations or councils. Fewer and better churches were being urged for these larger areas, to be manned with personnel trained to deal with recurring urban social problems. A table of suggested methods was in use, based on previous experiments, to aid in adjusting church work to changing social environments. Although developed during war years, many conditions remained unchanged through 1946, so that the methods were still of use. More than 30 objectives were included as the goal of achievement in the immediate post-war years. Included in the adjustments listed were relocating, federating of churches, forming of new churches, using older ones as nuclei; transfer of field and property to other denominations or churches; developing larger parishes; encouraging multiple constituencies; joint use of property by two or more churches; use of "adjunct institutions," such as neighborhood houses or Christian centers; and branch and Community churches.

The general objectives included the overcoming of handicaps of underlying subnormal conditions; more adequate meeting of social and community changes; accepting responsibility to minister to special conditions; and seeking to increase Christian solutions for emergent ethical issues. Specific objects included setting up continuous research; continuous cooperative planning; maintenance of proper balance between central and peripheral churches; adopt common policy for organizing new churches with special reference to suburbs; adapt churches to suburban expansion; devise church programs to match special neighborhood needs; continue emergency ministries in war housing projects; take advanced ground on the relations of racial groups and churches; maintain solidarity despite theological differences; pool Christian resources to serve the neediest in the community; develop a religious master plan for the metropolitan community; and make common cause with constructive secular community planning movements.

The department of race relations held its seventh annual conference of church leaders in April at Lincoln University, in Pennsylvania, in cooperation with the Home Missions Council of North America. Among the urgent recommendations that followed were emphasis upon the need for a better informed Church, improved leadership, and protection and encouragement of minority racial groups.

UNITED COUNCIL OF CHURCH WOMEN

The third biennial assembly of the United Council of Church Women was held Nov. 11-15 in Grand Rapids, Mich. Plans were formulated by which the women agreed they would consider affiliating in a proposed new National Council of the Churches of Christ in America, bringing together interdenominational groups collaborating with the Federal Council of the Churches of Christ in America. A continuing committee on procedure was named. State and local councils of churchwomen were urged to make a united impact on all segregation practices in the community life of the nation, giving particular emphasis to enforcement of civil rights laws; interpretation and enforcement of the U. S. Supreme Court rulings on transportation, education, and the right to vote in all states having separation laws, and voting restrictions and breaking the pattern of segregation in Washington, D. C. The women pronounced their opposition to lynching and mob violence, to peacetime compulsory military training, and urged universal disarmament, the study by women of the churches of labor-management problems, and a sympathetic concern for alcoholics. More than 1,500 women attended, representing 72 denominations and 18 foreign countries.

HOME MISSIONS COUNCIL

More than 1,000 Protestant rural churchmen attended the third annual convocation on town and country problems Nov. 12-14 at Des Moines, Ia. under the auspices of the Home Missions Council, the Federal Council of Churches, and the International Council of Religious Education. A highlight was a 70-page report by H. Paul Douglass, director of the Committee for Cooperative Field Research of the Federal Council, covering rural churches in Iowa. It showed overchurching and "rather low" effectiveness for the average rural church in that state. The survey was begun in January, 1946 with the collaboration of the Iowa Interchurch Council and the Iowa Christian Rural Fellowship, and covered communities chosen by eight denominations. Another speaker was Monsignor L. G. Ligutti, executive secretary of the National Roman Catholic Rural Life Conference, who looked upon small rural communities as protection against atomic destruction. A meeting of representatives of rural interests of Protestant denominations in the United States, Canada, and several other foreign countries went into the land problem also in New York City in May, in a session devoted to study and hearing of reports on the problem in this and other countries.

The Home Missions Council reported holding spiritual and social programs for 90,000 agricultural migrants in 17 states during the 1946 food production season, at a cost of $72,000. At the closing session of the annual meeting held in January, 1946 at Buck Hill Falls, the Home Missions Council delegates adopted a statement on principles which was referred to the executive committee to be used in drawing up a document for disposal at the 1947 annual meeting. Among the principles evolved was that "definite steps must be taken to remove conditions which foster continuous mobility of populations. Permanency of community life must be reestablished in order to permit the full and free development of Christian personality and group life." A basic strategy for eliminating migrancy was asked. Also the training of more Christian leaders in labor and management problems, and new commitments in home missions through interdenominational cooperation. A budget of $326,092 was adopted for 1946, which was $72,000 higher than that of 1945.

THE AMERICAN BIBLE SOCIETY

The society published in 1946 a report of its activities, stating it had distributed in the 130th year of its history in 1945 a total of 12,243,355 volumes of the Scriptures and that the average the preceding ten years had been 8,251,197. It promoted a world-wide Bible reading program from Thanksgiving to Christmas in place of its previous domestic program. Louie D. Newton, president of the Southern Baptist Convention, in a report to the society on his trip to Russia, said he had preached in Baptist churches there, and everywhere he went he found bibles. J. I. Zhidkov, president of the All-Union Council of Evangelicals and Baptists, and Mikhail A. Orlov, pastor of the Moscow Baptist Church, sent thanks through Dr. Newton for Russian New Testaments sent to Russian prisoners of war.

AMERICAN MISSIONARY ASSOCIATION

The American Missionary Association, which was organized Sept. 3, 1846 in a Baptist Church in Albany, N. Y., celebrated its 100th anniversary in 1946. The Association was organized on a non-denominational basis, but in 1937 completed arrangements for the Board of Home Missions of Congregational Christian Churches to act as its agent, retaining its original status. In its first 100 years it had started and divested itself of 500 schools and colleges on the principle of letting go its control over institutions able to continue with other aid. Often, such institutions were placed in the hands of public boards of education. The Association was organized in the days of anti-slavery agitation and was abolitionist. Since the Civil War, attention has been turned to the rights of minorities spearheading freedom for Negroes, Southern Highlanders, Jamaicans, Hawaiians, Orientals, Indians, Eskimos, and Puerto Ricans. Its race relations department was established in 1943.

INTERFAITH PRONOUNCEMENT

The first post-war pronouncement on economic justice, signed by Roman Catholic, Protestant, and Jewish leaders, came out in 1946 with 122 signers. Other pronouncements had been issued in 1938 and 1940. It emphasized that the moral law must govern in economic life and that the moral purpose of economic life is social justice. "To make the profit motive the guiding principle in economic life is to violate the order which God himself has established," it declared. It called for voluntary organizations of workers, farmers, employers, and professional people without regard to race, creed, color, or nationality, "to assume their full responsibility for the ethical conduct of their own industry or profession and for the economic welfare of the community." Organized cooperation was recommended as a substitute for the rule of competition. International life was also subject to moral law, the pronouncement stated, setting forth the obligations of community, state, Federal, and International governments to step in where the common good was not being served by "functional economic groups." In the international field particularly, it called for assistance by national governments and the economic collaboration of groups to help "all States to provide an adequate standard of living for their citizens" through replacement of "the present economic monopoly and exploitation of natural resources by privileged groups and States."

CHRISTIANS AND JEWS

The first International Conference of Christians and Jews was held in Oxford, England, July 30 to Aug. 6, 1946, bringing together 150 members from Protestant, Roman Catholic, Orthodox, and Jewish communities in 15 countries, to deliberate on the fundamental implications of freedom, justice, and responsibility in the post-war world. A particularly deep concern was expressed over diverse forms and degrees of discrimination against, and persecution of, Jews, Roman Catholics, Orthodox, and Protestant believers in Europe. The Conference, in view of the complexity of these and many other problems before the Paris Conference of statesmen who were met to draft peace treaties, gave assurances of support of any endeavor to give effect to the principles of the Charter of the United Nations, which were directed toward "the promotion and encouragement of respect for human rights and fundamental freedoms for all, without distinction of race, sex, language, or religion."

Several German clergymen attended the conference in Oxford, which was held to plan what could be done to prevent on a world scale a rise of hate. It was decided to establish a permanent World Council of Christians and Jews and set up a workshop in Zurich, Switzerland, to start on a program led by scientists, educators, religious leaders, and statesmen. A message was sent to the Paris Peace Conference, urging that provisions be written into treaties with defeated countries to forestall discrimination against minorities.

YOUNG MEN'S AND WOMEN'S CHRISTIAN ASSOCIATIONS

The forty-fifth international convention of the Y. M. C. A. was held in March at Atlantic City, and was attended by 2,000 delegates who sent out a call to all units in the United States and Canada, urging rededication to the task of eliminating racial discrimination. An upward trend was reported in the improvement of race relations since 1931, when a previous resolution calling for racial equality had been adopted. The delegates pledged themselves on behalf of training leaders for world citizenship in their own organizations and to seek alignments with religious and educational organizations working to the same end. A budget of $8,657,932 was adopted to be applied toward financing the rebuilding and re-equipment of Y. M. C. A.'s in war-torn areas. A post-war reconstruction program was mapped out to cover from three to five years. More than 80 buildings were reported destroyed in Europe and the Far East.

The annual convention of the Young Women's Christian Association in Atlantic City in the spring of 1946 adopted recommendations calling for a broadening of relations with Negro women as members and a continued study of interracial practices of all groups.

PROTESTANT DENOMINATIONAL ACTIVITIES

By Preston King Sheldon
Editor and Writer

DENOMINATIONAL CONTRIBUTIONS

Indications from available data at the end of 1946 were that contributions for all purposes by Protestant congregations in the United States and Canada, were higher than in 1929 by 19 per cent and than in 1945 by 20 per cent. The United Stewardship Council reported that the total giving recorded in its statistics for 1946 had come to $613,898,510, as compared with $514,992,105 for 1929, when five denominations were included which did not report in 1946. The report stated that "the denominations reporting this year that did not report in 1929, all made contributions smaller than the average for the denominations of their size." Two denominations, however, were added for the first time in 1946, the Brethren Church (not to be confused with the Church of the Brethren), and the Baptist Maritime Provinces in Canada.

A total of 26 denominations reported in both countries. There were 21 reporting from the United States with a total of $591,254,555 for 1946 as compared with $492,198,185 the year previous. Part of the increased giving was the result of drives for funds for post-war rehabilitation, including money for food and clothing as well as rebuilding.

MEMBERSHIP GROWTH AND TRENDS

Dr. F. Ernest Johnson, executive secretary of the department of research and education of the Federal Council of the Churches of Christ in America, in an address at the biennial meeting of the Federal Council of the Churches of Christ in America, in Seattle, in December, said there was reason to believe the rate of membership growth had been accelerated since 1944. He said a study of the membership trend for 1943-44 compared with previous statistics disclosed that 47 Protestant bodies, having as many as 50,000 members in either or both of those years, had increased by about 36.5 per cent during the period. The estimated population growth was 17.9 per cent. This was being continued according to indications shown in reports of many individual Protestant bodies.

CHURCH MERGERS AND UNITY PLANS

The year 1946 saw the merger of the United Brethren in Christ and the Evangelical Church in November. Negotiations for merging, which had been going on between the Protestant Episcopal Church and the Presbyterian Church in the U. S. A. and receiving active support among leaders of the latter communion, were held up by a delay in reaching a decision among the Episcopalians. The triennial General Convention of the Protestant Episcopal Church in Philadelphia, in June, 1946, heard majority and minority reports which were received with expressions of appreciation. The Episcopalian Commission on Approaches to Unity was asked to prepare a statement of faith and order in harmony with the Lambeth Quadrilateral, for report at the next triennial meeting in the Fall of 1949. Meanwhile, study and conversations were being carried on with representatives of the Presbyterians. The latter also were seeking to hasten the movement toward church unity by seeking negotiations with at least one other denomination in addition to the Protestant Episcopal Church and the Presbyterian Church in the United States, or so-called Southern Presbyterian Church. Plans for consolidating agencies of the two Presbyterian bodies were going forward in December, 1946. Their general assemblies which met in May in different cities, exchanged fraternal delegates. A proposed union of the Evangelical and Reformed Church with the Congregational Christian Church, which had been under consideration for five years, was given place on the agenda of the biennial meeting of the latter body's general council in Grinnell, Ia., in June, 1946, at which time additional data was called for and authorization given for calling a special meeting in 1947 on the problem, if warranted.

LAY PARTICIPATION IN CHURCH ACTIVITIES

New impetus was noted in 1946 to larger participation in church activities by laymen. Young lay delegates, 90 per cent of them veterans from 20 Protestant denominations, met at a call from the Federal Council of the Churches of Christ in America and the International Council of Religious Education, at Lakeside, O., Sept. 3-6, to learn what they might do to help as leaders to strengthen the program of their local churches. There were 350 present. A statement adopted in plenary session pledged the delegates to "a reexamination of the whole church program, seeking to make all phases of its work more vital." Special recommendations were also drawn up, looking toward a continuation of this work. The recommendations called upon the two sponsors to "consider the possibility of providing national staff leadership for young churchmen," and before adjourning had established a committee of 16 to work with agencies in any future projects. A special recommendation urged an exchange of young churchmen with Russians in order to foster improved relations with the Soviet Union.

The first annual convention of youth of the Protestant Episcopal Church was held in Philadelphia, Sept. 14 and 15, with 300 delegates attending. They pledged aid to the church's program for rehabilitation and advance; dedicated themselves to study of interracial attitudes and relations; pledged support to the World Council of Churches; approved wheatless days to help feed the hungry; planned active cooperation in world relief; sent fraternal greetings to Christian youth in Japan; approved Christian unity, and allocated an offering to train native Christian youth in Japan.

THE CHURCHES AND THE VETERANS

A score of bishops of the Methodist Church conferred with 500 Methodist veterans from 45 states July 4 to 7 in Columbus, O., who urged the bishops to send a resolution to the Secretaries of War and Navy and other Federal officials calling for immediate release of conscientious objectors on the same point discharge basis as servicemen. Of the 500 delegates who attended this conference, about one-fifth were reported to have been former officers, holding ranks up to Lieutenant-Colonel and Commander. The veterans called upon their denomination "to take leadership in promoting Protestant unification"; "make substantial changes in its educational program"; and "to give veterans and other young men positions of greater responsibility in their churches." They supported "our country's participation in the United Nations," saying they were "convinced that for the preservation of peace we must willingly relinquish some of our national sovereignty." They urged revised procedures to make housing available to veterans; higher moral standards in our armed forces, and reconciliation of the differences between management and labor as a "Christian duty."

PRONOUNCEMENT ON VATICAN REPRESENTATION

Among the denominational pronouncements were continued protests over maintenance of a representative of the President of the United States at the Vatican in Rome, and requests for the recall of Myron C. Taylor from that post.

A delegation of eleven Protestant leaders had an audience with President Truman in June regarding the continuance of the Vatican appointment and reported he had assured them it was but a temporary expedient. The executive committee of the Federal Council, in an action on Jan. 15, 1946, had cited and transmitted to President Truman a statement adopted at the biennial meeting of the Council in 1944 in Pittsburgh, calling for separation of Church and State. (See THE AMERICAN YEAR BOOK, 1944, page 670.) This was brought up again with the actions in 1946 of seven Protestant denominations, at the June audience with the President, together with similar actions announced by more than 30 regional Protestant bodies, running back into 1945.

PRONOUNCEMENTS AGAINST CONSCRIPTION

A new consciousness of the horrors of war was evident among Protestants in 1946 as moves were made against continued compulsory conscription in peacetime, and calls came for release of conscientious objectors from denominations outside the pale of what, until the Second World War, was regarded as the special province of the peace churches. Control of atomic energy was added to the concern of a widening circle of Protestants as the nature of the most recent world conflict through force of arms began to be realized.

Among the denominations pronouncing against compulsory conscription was the Presbyterian Church in the U. S. A., which also asked amnesty for conscientious objectors, control of atomic energy and "immediate ceasing of the manufacture of atomic bombs." Amnesty was also asked by the Protestant Episcopal Triennial General Convention and the Northern Baptist Convention. The Episcopalians also placed themselves "squarely behind the United Nations, urging larger powers." Joining in opposition to continued compulsory peacetime conscription were Northern and Southern Baptists and the Church of the Brethren, the latter maintaining its tradition as one of a group of peace churches and also calling for amnesty for conscientious objectors, having been a leading protector of their rights.

SEVENTH DAY ADVENTISTS

Statistical summaries on Seventh Day Adventist churches throughout the world, at the close of 1945, disclosed a membership of 576,378 in 9,496 churches. Membership outside of North America was 363,864. The denomination had 69 union conferences and mission fields and 510 institutions. Total offerings were $31,540,935 in tithes, gifts for missions and local church work. That part of the offerings designated for foreign missions was $7,837,868. The gain in total offerings was $2,855,501. There was also a gain of 18,418 in Sabbath school memberships, bringing enrollments to 688,281.

The forty-fifth quadrennial world session of the denomination, postponed a year because of the war, was attended by 800 delegates of which 300 were from foreign countries. It was held in Takoma Park, Washington, D. C. Delegates to the denominational Autumn Council in October, in Grand Rapids, Mich., were urged to intensify their efforts, begun in 1945, to provide funds for overseas relief and rehabilitation. The organizing of a corporation to supervise and control increased welfare work was authorized, to be known as the Seventh-Day Adventist Charities, Inc.

NORTHERN BAPTISTS

The Northern Baptist Convention reported, at its annual meeting in Grand Rapids, Mich. in May, 1946, a total of 7,603 churches with 1,468,043 members and 7,716 pastors and missionaries. Total receipts for all purposes were $7,431,736.

Its American Baptist Home Mission Society raised $724,913 for use in cities, missions in Latin America, town and country work, evangelism, public and interdenominational relations, and ministering to service personnel. The American Baptist Foreign Mission Society raised $1,006,812. Its fields included Burma, Assam, Bengal-Orissa, South India, South. East, and West China, the Philippines, Japan, Belgian Congo, and Europe. During the year, 84 new missionaries were sent out.

The Woman's American Baptist Foreign Mission Society celebrated its seventy-fifth anniversary on April 3, 1946, local units participating. Its receipts were $289,954. The Woman's American Baptist Home Mission Society's receipts were $270,574.

The Board of Education and Publication of the denomination reported receipts of $334,755. Its activities included a special study of theological education; appointment of national secretaries for the departments of leadership education, adult work, and family life; development of a national Baptist Assembly at Green Lake, Wis.; missionary education; Christian education and work in the department of schools, colleges and seminaries, of which institutions there were 65.

The major project of 1945-46 was a World Mission Crusade for $14,000,000 for world relief, rehabilitation, and missions promotion, which was to end April 30, 1947. As part of this campaign, a Christian Life Crusade was conducted throughout the churches of the denomination. The emphasis covered world missions, returning service personnel, evangelism. Christian education, stewardship, and Christian social progress. A training center was established at the National Baptist Assembly in Green Lake, Wis. to train 180 pastors and laymen for the Christian Life Crusade work in 34 areas in which institutes were conducted.

Resolutions adopted at the annual meeting of the Northern Baptist Convention in May included those supporting the United Nations and control of atomic energy; opposing compulsory military conscription in time of peace, and asking that "conscientious objectors now in civilian public service camps be released in proportion to the release of servicemen and women." Opposition was again raised to the continued appointment of Myron C. Taylor as representative of the President of the United States at the Vatican. Other resolutions called for strengthening the moral and spiritual foundations of our national life; building of more homes; returning of people to the land; a program of juvenile protection; urged the importance of exercising the right to vote; better industrial relations among employers and employees; establishment of a permanent fair employment practices commission by the Federal Government; and requested the State Department to encourage complete religious freedom in all those countries with which it entered into treaty agreements and "to use its influence in every possible way to assure the just administration of such laws as may be enacted to protect the rights of minority groups."

The denomination's Council on Christian Social Progress initiated for 1946-47 a campaign against liquor advertising in magazines and over the radio, giving attention to this through committees on youth and women's and men's work. The Council also voted, at a meeting held in New York City in the Spring of 1946, to record its conviction that every effort "must be made by the United States of America to promote mutual understanding between this country and Russia in the interest of cooperative action" through the United Nations for world peace. It also called for international abolition of compulsory peacetime military training:

SOUTHERN BAPTISTS

The Southern Baptist Convention, organized in Augusta, Ga., May 8, 1845, celebrated its centennial a year late, because of war conditions in 1945 except for local celebrations. The annual meeting was held in Miami, Fla., May 15-19, 1946. It had met in Florida three times previously, in Jacksonville, 1911 and 1922, and St. Petersburg, 1932. When the denomination was organized it had 325 representatives from eight southern states and the District of Columbia. At that time there were 350,000 members of Southern Baptist churches, including 100,000 slaves. It was over the question of slavery and other vital issues that Northern and Southern Baptists became separated. After 1814, when the old Triennial Baptist Convention was organized in Philadelphia, Southern Baptists had cooperated with that body.

In the 101 years after 1845, Southern Baptists had spread to include ten other states and southern Illinois. Its membership grew to 5,865,554, and there were 26,134 churches reported in 1946 at the annual meeting. Property value exceeded $276,085,000. Contributions to local church work in 1945 were $75,967,674, and to missions and benevolences $22,490,751, making a grand total of $98,458,425. This was a reported gain of $21,859,005, for all purposes, over 1944.

The Southern Baptist Woman's Missionary Union, through 41,227 units, raised $6,517,322 in 1945, exclusive of contributions for local church work, which was an increase of $129,723 over 1944. There were 4,782 new units set up, bringing total enrollments to 739,360, of whom 338,896 were young people.

The Sunday School Board reported an increase of 459 Sunday Schools and a rise of 152,401 in total Sunday School enrollments. Receipts in 1945 were $4,526,751, an increase of $368,866 over 1944. This brought the Sunday Schools to 24,968 and the total enrollment to 3,525,310. A total of 50,391 training unions reported an enrollment of 703,332. Vacation Bible schools were increasing, the total for 1945 being 10,222 with 801,218 enrolled. The total circulation of all periodicals was 26,193,273, an increase of 2,093,586 over 1944.

The Southern Baptist Education Commission reported a goal of $23,165,000 for endowing and building educational institutions of the denomination. Its 60 schools had a drop of about 10,000 in enrollments in 1945, because of the war, the decreased number being 21,000. This was overcome the following year when more than 35,000 enrollments were reported, a record figure. The total endowments, when the drive for additional finances was announced, was $85,318,844.

The Relief and Annuity Board reported annual income of $2,676,451. Its assets had grown from $106,428 in 1919 to $9,447,714 at the end of 1945. These had been increased by more than $1,500,000 in that year and were above $10,000,000 by the time the centennial meeting ended in May.

CHURCH OF THE BRETHREN

The Church of the Brethren, whose members were early known as "peace seekers" and were obliged to leave Germany because of their religious convictions, within a decade after the body was organized in 1708 was one of three peace churches responsible in the Second World War for maintenance and administration of Civilian Public Service Camps set up as centers to be used for wartime work of conscientious objectors to military service. It reported in the Fall of 1946 that about 14 per cent of all conscientious objectors in such camps were from its membership. At one time it operated 14 of its own camps.

Its council of boards reiterated an historic stand at an executive session in Elgin, Ill., Nov. 13, 1946, when it called on President Truman "to use Christmas of 1946 as the occasion for proclaiming a general amnesty for conscientious objectors." A statement coming from a conference of the board declared: "Believing that no amount of armament can protect a people from the ravages of war, the Church views with dismay the preparation for future war. Believing further, that disarmament will allay the fears of all people concerning the danger of unwarranted attack, that it will provide the basis for the establishment of a stable peace, and that it will release human energies for the task of rebuilding the world and rehabilitating its people, the Church appeals to all the States of the world to take immediate steps toward worldwide accord for universal disarmament and for the settling of all disputes between nations without recourse to arms." It felt "a special sense of significance" for this appeal following "the recent advocacy and endorsement of the disarmament principle by the United States and Russia."

The Church of the Brethren in its year book for 1946 reported for the previous year, ended Sept. 30, 1945, a total of 1,021 churches with 181,087 members in the United States and Canada. There were 5,489 baptisms, with a net gain of 800. According to reports from 962 church schools, there were 115,586 enrollments in Sunday classes. The denomination had 302 full-time and 467 part-time pastors.

The denomination in 1945 spent $342,000 to meet the expenses of its services to conscientious objectors and in 1946, as these were released, initiated a program to help them get adjusted to the change. Its Service Committee had, in two years, developed facilities at New Windsor, Md. for handling relief materials, offering it to other denominations as a collecting place for shipments overseas. More than 30 denominations accepted and were sending their gifts of clothing, shoes, and food through it. It reached a processing capacity of 175,000 pounds weekly.

A particularly active project developed by the denomination in 1945 and continued through 1946, was the shipping of heifers to needy European families. This project is to be extended two years. In 1945, members of the Church of the Brethren spent $1,055,797 for denominational service projects, principally foreign relief. By May 1, 1946, 1,300 heifers had been shipped. A shipment of 56,000 hatching eggs went to Warsaw, Poland. Included in items shipped in 1946 were garden seeds, cereals, canned foods, soap, books, Bibles, garden tools, and bicycles.

CONGREGATIONAL CHRISTIAN CHURCHES

This denomination reported 1,130,824 members in the United States attending 5,836 churches as of Jan. 1, 1946. In addition there were 121,200 members of 678 churches in foreign countries. The roll of ministers included 5,882 ordained, of whom 3,111 were pastors, 120 denominational officials, 101 missionaries, 263 educators, and 433 chaplains. Gifts for benevolences reported from 5,199 churches totaled $3,951,495. Home expenses were reported by 5,028 churches, and these came to $19,301,121. The total property value reported by 5,514 churches was $171,892,927. Invested funds were reported by 1,920 churches, the total being $31,225,155.

The American Board of Commissioners for Foreign Missions had an income of $1,327,800 and investments of $8,054,338. The Board of Home Missions expenses were $1,626,636, and investments were $25,350,525. The total income of all agencies was $6,232,247, and investments were $52,744,646.

The biennial meeting of the General Council was convened at Grinnell, Ia. in June, where a proposal was defeated 477 to 24 to divorce from it the Congregational Christian Council for Social Action. A committee was authorized to prepare supplementary data on a proposal to merge the denomination with the Evangelical and Reformed Church. Dr. Truman B. Douglass, executive vice-president of the Board of Home Missions, obtained adoption of a proposal to the Federal Council of the Churches of Christ in America, asking it to convene a plenary session of representatives of American churches to consider the possibility of closer unity of American denominations which already were according one another "mutual recognition of ministries and sacraments." A post-war emergency project, calling for $6,114,576, was approved for overseas and home relief. Support was urged of the Acheson-Lilienthal report on international control of atomic energy and of the Baruch proposals before the United Nations Atomic Energy Commission.

DISCIPLES OF CHRIST

The total membership of these churches for the year ended June 30, 1945 in the United States and Canada was 1,701,028 and throughout the world was 1,867,591. There was a gain in the United States and Canada over the previous year of 19,095 and a world gain of 21,762. Total churches for the United States and Canada were 8,004, an increase of six, and for the world, 8;926, an increase of 21. Reports were given for the United States and Canadian churches, showing 7,854 ministers, compared with 7,782 the year before, an increase of 72. Total offerings from churches in these two countries were $8,759,873 Baptisms were 50,607, an increase of 2,412.

The denomination's United Christian Missionary Society reported assets of $7,670,870, compared with $70,071,958 the year before. Total Bible school enrollments were 1,013,679 for the United States and Canada, an increase of 14,190, and for the world, 1,073,478, an increase of 14,776.

PROTESTANT EPISCOPAL CHURCH

A national deficit, which had existed since 1934 because of decreased giving in 1933, amounting to $852,740, had been paid in full by the time of the triennial general convention held in Philadelphia in June, 1946. Lewis B. Franklin, retiring treasurer, announced increased giving, the year 1945 showing a 27 per cent rise over 1943, or an average of $1.25 per communicant per year, for the general denominational program, which was not considered sufficient.

A United Thank Offering of $1,631,576 was handed in at a corporate communion by 4,000 Episcopal women, which was reported the largest such donation in 60 years. Mrs. Randolph H. Dyer, of the Diocese of Missouri, was seated at the convention as the first woman deputy. Former U. S. Supreme Court Justice Owen J. Roberts was elected the first lay president of the house of clerical and lay deputies. The convention adopted a budget of $3,386,887 for 1947, which was $651,829 more than for 1946. The National Council, which administers the business of the denomination in the interim between triennial general convention meetings, was instructed to raise not less than $1,000,000 in each of the three years beginning in 1947 for the Presiding Bishop's Fund for World Relief. This was to be disbursed for relief and inter-church aid programs coordinated by Church World Service through the World Council of Churches and the National Christian Councils in eastern Asia. Bishop Henry Knox Sherrill of Massachusetts succeeded Bishop Henry St. George Tucker as Presiding Bishop. The latter retired Dec. 31, 1946. The convention had as special guests the Archbishops of Canterbury and of the West Indies.

An original goal of $5,000,000 announced in 1945 for reconstruction and rehabilitation of church properties destroyed by war was later increased to $8,800,000, but the total raised as reported at the convention in Philadelphia came to $7,057,919. The national council, in December, 1946, announced plans to disburse somewhat less than this amount but emphasized several million dollars more were needed, particularly in the Orient.

The denomination reported in 1946 having 2,300,575 baptized members and 1,583,338 communicants, respective increases in these classifications of 30,613 and 15,186 over 1945. Total contributions for all purposes increased by $6,841,357 and reached $53,011,393. Church schools had the first increase in enrollments since 1939, the years intervening each having shown a decrease. The total in 1946 was 404,253, and the year's increase was 9,797. The number of postulants for religious orders was 817, the highest on record. Ordinations had dropped in 1945, fewer candidates for the ministry being in training through the war years. There were 178 deacons and 167 priests ordained, representing drops of three and 42. The clergy rosters disclosed 6,450 pastors. There were 7,648 parishes and missions, exclusive of institutional chapels and preaching stations. Adult baptisms totaled 14,243, a gain of 210. Infant baptisms declined 1,090 from 1945, to 71,287. The most notable decrease was in confirmations, there having been 67,076 in 1946 as against the previous year's figure of 68,868. Low enrollments in church schools in 1943, 1944, and 1945 were considered responsible.

EVANGELICAL UNITED BRETHREN CHURCH

An anticipated merger of the United Brethren in Christ and the Evangelical Church took place, Nov. 16, 1946, in Johnstown, Pa. The two denominations were represented in the uniting assembly by 455 delegates. Immediately following the merger, they met in the first general conference.

Statistics prepared for each denomination in advance of the merger disclosed that the United Brethren had a total membership in the United States of 436,525, an increase over the previous year of 3,010. There were 18,213 members in other countries, giving a total of 454,738. A total of $324,452 was received for foreign missions and $200,000 for home missions. Benevolence receipts were $1,924,466 compared with $1,715,676 the year before. The total received for all purposes was $8,395,342, compared with $7,781,249. There were 1,276 full-time pastors, as compared with 1,171 the previous year. Part-time pastors had dropped from 325 to 243. There were 1,329 itinerant elders in the United States and 68 more abroad. Sunday School enrollments were 355,111, as compared with 353,923 the year before.

The Evangelical group reported consistent increases in members for the past 20 years, averaging 9,673 per quadrennium, but during the latest the total was 15,061. Giving declined in 1934 to $4,002,228, from a figure of $6,613,133 for 1930. In 1946 it rose to $8,217,812. Sunday School enrollments had dropped by 28,000 in eight years, and 71,000 in the 20 years, the latest figure being 264,119. An upward trend, however, was indicated in the last year of the quadrennium. The church membership was 263,536 for North America. Contributions to general missions and benevolences were $945,148.

The sales of publications by the Evangelical group totaled $5,546,328 for the quadrennium. The quadrennial report of the missionary society showed a total income of $2,352,750, as compared with $1,416,801 in the previous quadrennium.

The new denomination started 1947 with all bishops of the old bodies retaining their office. Headquarters, on Jan. 1, 1947, were set up in the United Brethren Building in Dayton, O.

FRIENDS

More than 1,500 members of the Religious Society of Friends attended the biennial meeting of the Friends General Conference, Cape May, N. J., June 21-28. A foreign service budget of $6,000,000 was announced by the American Friends Service Committee, which had 480 workers and staff members. In Philadelphia, its head office was handling numerous requests for service, touching most of the areas in which it was carrying on foreign programs. These included inquiries as to missing relatives in Europe, welfare reports, and foreign service, which were all increased with the reopening of work in France following the end of hostilities. Close to 1,000,000 articles of clothing were shipped in 1945.

The committee placed new emphasis upon education for peace through 1945 and 1946, conducting work camps and service projects for young people, conferences, and institutes with many round table discussions. A number of round table groups met at Cape May, N. J., where problems included international relations, the Four Freedoms, race relations, and the specific projects of the American Friends Service Committee, including raising of funds, for foreign work. At home, the committee was hard at work providing vocational guidance to conscientious objectors as they were released from Civilian Public Service Camps. In 1945, it gave $62,000 for the support of 175 families of these men.

Social service was provided for 375 such families.

Its income from cash and gifts in kind for 1945 totaled $3,732,954, the gifts having an estimated value of $705,205, the remainder being cash. Expenditures, including materials received in kind for the committee's many programs, were $3,212,260. In a new budget, provision was made for $20,000 to use for temporary loans to conscientious objectors leaving civilian public service camps and seeking places in business, the professions, or farming. With the systematic release of these men, beginning in October, 1945, the Friends began appointing former CPS men for overseas posts and in administrative and field work of the committee in the United States. A liaison was established with British Quaker agencies through an interchange of administrative staff. The service committee initiated grants in aid for resuming formal education by released CPS men and half-scholarship assistance was added by Quaker colleges.

Another unit, started in 1943 as the Women's Service in Mental Hospitals, had acquired the services of 100 girls, and by the end of 1945 the name was changed to Institutional Service Units. The women served an average of five months as attendants, recreation and occupational therapy aides, clerks, secretaries, and nurses. Emphasis was given to problems in state institutions in 1946 and the need for such workers.

Toward the end of 1946 the committee announced plans to set up headquarters in Paris where contacts would be made with Quaker missions in European countries for consultation on impending relief.

LUTHERANS

Plans for restoration of the Lutheran World Convention, as the cooperative agency of Lutheran churches in 28 countries under a new identity as the Lutheran World Federation, were inaugurated in Upsala, Sweden, in July, 1946, continuing in office as president of the executive committee, Archbishop Erling Eidem, Primate of the State Lutheran Church of Sweden, and as executive secretary Dr. Sylvester C. Michelfelder. Both had been informally chosen for the posts at Copenhagen, Denmark, in December, 1945. A World Assembly was set for late June, 1947, at Lund, Sweden, to discuss all phases of denominational work. The plan was announced to have such assemblies every five years.

Delegates to the fifteenth biennial convention of the United Lutheran Church in America at Cleveland, O., in October, 1946, unanimously approved a new hymnal already endorsed by the Augustana Synod, the American Lutheran Church, and the United Evangelical Lutheran Church; endorsed the plan to reestablish the Lutheran World Convention as a federation, and reaffirmed support of the World Council of Churches and the Federal Council of the Churches of Christ in America. These steps were regarded as further progress toward Christian unity. Other contributions to the common effort were made by the Norwegian Lutheran Church of America, which, in June, 1946, changed its name to the Evangelical Lutheran Church in a specific move to open its membership to non-Norwegians, as well as to attract English-speaking members of Norwegian ancestry. In this, was followed the example of the former United Danish Evangelical Lutheran Church in America, which, in 1945, became the United Evangelical Lutheran Church.

The baptized membership of Lutheran churches in the United States and Canada rose to 5,522,307 during 1945, an increase of 117,516 over 1944, according to the annual statistical summary of the National Lutheran Council. Confirmed members totaled 3,877,657, an increase of 81,141. The rise in each classification was 2.1 per cent. There were 16,158 churches. The summary was based on data from 18 bodies, covering all Lutherans in America. Of these, seven had gains, four had losses in membership, one had no change, and six did not report latest figures. The highest increase was reported by the Missouri Lutheran Synod, which gained 29,456 members. The Augustana Synod had the greatest percentage increase, adding 19,791 and reaching 4.8 per cent. Other gains reported were: United Lutherans, 23.289; American, 17,075; Evangelical Lutheran, 27,405; United Evangelical Lutheran Church, 1,093; and the Negro Mission, with an increase of 549, or 4.5 per cent. Losses were confined to the smaller groups. The Finnish Suomi Synod showed a drop of 681 members to 29,875; the Norwegian Synod, a drop of 411, to 9,012; the Danish Lutheran Church of 40, to 19,428; and the Eilsen Synod of 10 to 1,380.

The number of ordained Lutheran ministers rose to 14,388, an increase of 435. Of these 10,600, or 384 more than the previous year were serving in pastorates. Seventy-one new churches were started. During the year, 819 parish schools were established, bringing the total to 24,129; their staffs were increased by 6,389 to 194,814 officers and teachers. They gained 61,087 pupils, the total being 1,974,014. The value of church property was increased by $21,891,788 to a high of $431,022,697. Indebtedness was reduced by a record $10,132,516 to a new low of $14.638.023. The churches devoted $73,357,078 to local expenses and contributed $30,889,713 to church work at large, the total expenditures of $104,246,791 being an increase of $16,117,903 over 1944.

METHODISTS

The major emphasis among Methodists in 1946 was evangelism. Eighty-two new missionaries were appointed to home and foreign fields. Reports from 40,498 preaching places disclosed, by Oct. 15, a total of 910,447 accessions to membership toward a goal of 1,000,000 for the year. Of these, 491,113 were received on confession of faith and 419,334 by transfer. The evangelistic goals had been reached by eight episcopal areas out of 33; 43 annual conferences out of 110, and 214 districts out of 560. Another goal for 1946 was the establishing of 500 new churches. The total result was the organizing of 728 new or re-established churches. Diminishing church school enrollments and attendance, noted the previous decade, was changed to a gain of 401,712 in 1946. In the wake of these achievements the denomination set out for 1947 to promote further gains with intensive preaching, study and conversation groups, special meetings, pageantry, and audio-visual aids. There were 18,298 active ministers at the start of 1946.

The latest available complete figures were those for 1945. They showed a total membership, active and inactive, of 8,083,767. The 1946 accessions, while applicable toward an increase in that figure, were withheld for the 1947 report when offsetting losses could be used to produce a true total. Church property as of the year 1945 was valued at $801,250,932, against which there was an indebtedness of $19,025,291. This had been reduced by $6,000,000. The amount of total income for all purposes in 1945 was $148,286,227, which included a substantial proportion of the special $25,000,000 fund raised in 1945 and 1946 for post-war relief and reconstruction. The fund was so named because of an original goal but the total as of Nov. 22, 1946 had reached $26,822,637. The Sunday School enrollment was 4,848,748. The Woman's Society of Christian Service, with 1,589,561 members, raised $8,399,273 for local causes and $4,295,963 for general work, including missions. World service receipts, or budgeted benevolences, 1945-46, were $6,284,285, surpassing the 1944-45 figure by 8.29 per cent. In addition, $767,614 was received by several agencies direct from donors. An additional $1,000,000 was raised and disbursed by the Committee for Overseas Relief, headed by Bishop Herbert Welch. A survey of the denomination's 560 district superintendents revealed plans to expend more than $100,000,000 in the next five years in building new churches and parsonages and for extensive property renovations and additions.

The Board of Missions and Church Extension meeting at Buck Hill Falls, Pa., in December, made appropriations also of $9,381,319 for missions at home and abroad. Of this, $3,371,393 was allocated to foreign fields and $2,010,475 to missions in the United States and its territories. The Woman's Division of Christian Service appropriated $3,999,451 for work at home and abroad. Its department of Christian Social Relations and Local Church Activities concurred in an action of the United Council of Church Women directed at meeting the problem of segregation of minorities, particularly of Negroes in Washington, D. C. They resolved to seek a wider use of the ballot by education, the abolishing of the poll tax and procuring of voting rights without intimidation or restriction. They voted to support pending legislation against lynching, for Federal aid to education, the Maternal and Child Welfare Act, and providing medical care for all people.

The Board of Missions and Church Extension wound up its meeting by calling for immediate evacuation of southern Korea by American troops and of northern Korea by Russian troops, "with the establishment simultaneously of a United Nations Plebiscite Commission, which would proceed at the earliest possible date to hold an election to provide for free, democratic government." The Board urged Methodists to take "an intelligent and active interest in the social, political, and economic interrelations of the Philippine Republic and the United States of America." The Foreign Missions Conference of North America was urged, through its Philippines committee, to continue to provide leaders to strengthen the Christian Church in those islands. The Board also called for adoption of the principles of brotherhood and justice in all negotiations between the two republics. The division of foreign missions, deploring the situation in Palestine, affirmed its appeal "that no economic or political Western interest should be allowed to influence any attempt towards a solution" of the conflict there. Regarding racial tensions in the United States, the board urged "our people in both South and North to take upon their hearts the urgent necessity for achieving a wider and deeper understanding of interracial amity and brotherhood." It recommended to President Truman, Secretary of State Byrnes, Warren R. Austin, and all United States Senators and Representatives, that they "give full cooperation to the early establishment of the Trusteeship Council of the United Nations" and "that territories in the Pacific occupied in the recent war be placed under the Trusteeship of the Council."

Bishop G. Bromley Oxnam of New York City, at an evening session in Buck Hill Falls, Pa., urged the setting up of democracy at home to end dictatorship abroad. He called for "fundamental revisions in our concepts of sovereignty" and "in our concepts of property" as steps to peace.

AFRICAN METHODIST EPISCOPAL ZION CHURCH

The 150th anniversary of the withdrawing of a group of Negroes from the Old John Street Methodist Episcopal Church in New York City to found a denomination of their own, was celebrated at Mother Zion Church, New York City, for two weeks, early in September, 1946, with 4,000 in the congregation the opening night to hear Bishop Buford F. Gordon of Charlotte, N. C. preach. He said Negro Methodism had grown because of a denial to them as "deserving Christians the right to exercise their talents." He called not for building race consciousness, but working out of an inter-racial consciousness. The denomination, numbering more than 500,000, had taken as a goal in 1944 the raising of $2,000,000 and the adding of 500,000 additional members to its ranks, in connection with a two-year preparation to celebrate the anniversary. Its communicants were found in all parts of North America, and in some areas of South America, Africa, and Southern islands.

PRESBYTERIAN CHURCH, U. S. A.

More than $6,500,000 was contributed in the first several months of 1946, to the Presbyterian Restoration Fund, a drive which was launched June 1, 1945 to run for at least two years. As of March 31, 1946, the communicants of the denomination numbered 2,174,530, the largest in the church's 240 years history in America. Total contributions of $67,219,476 were above the 1929 level by more than $100,000 and represented an all-time high. It was a rise of $7,610,461 from the previous year, when the total was $59,669,015. Per capita giving was $31.76 as compared with $28.32 the year before. Denominational and local expenses were $55,309.203.

The denomination has churches in every state in the Union, and its mission work is being carried on by 2,686 missionaries in 3,949 projects. There were 40 synods and 268 presbyteries, with 8,572 churches and 9,454 ministers. More than 200 of its clergymen were still serving in the armed forces as chaplains, in 1946. Its Board of Christian Education had expenses in the year ended March 31, 1946 of $1,010,238. A program of evangelism was approved by the 158th General Assembly of the denomination in late May, 1946, at Atlantic City, which started Jan. 1, 1947 with a goal of 1,000,000 new members, 300 new churches or Sunday Schools, and the help of 100,000 trained laymen in carrying it out. The number of foreign countries in which such work was being carried on had increased from 16 before the Second World War to 26.

Among resolutions adopted was one calling for "the immediate cessation of the manufacture of atomic bombs" and that "all uses of atomic energy for the health and welfare of people be available to all people." Full participation was urged in the United Nations. A total of $80,000 was reported raised from voluntary contributions toward an obligation of $125,000 to peace churches which had assumed responsibility for the care of conscientious objectors during the war. A move to appropriate the balance from denominational funds was defeated, but continued acceptance of voluntary offerings was authorized, to raise the remaining $45,000.

In October the former weekly *Presbyterian Church Times* was merged with the former monthly *Presbyterian Tribune,* creating a new national Presbyterian weekly. A magazine format was retained for one issue to be published the second Saturday in each month, in which essays, editorials, and articles began to appear, emphasizing lay viewpoints. The remaining issues were continued in newspaper format and style. Dr. Carlyle Adams, former chaplain at Park College, Parkville, Mo. became editor. The editorial office was moved from Utica, N. Y. to Cadman Memorial Center, Brooklyn.

PRESBYTERIAN CHURCH, U. S.

The Presbyterian Church in the U. S. or Southern Presbyterian Church, reported from its 1945-46 data, a total of 3,524 churches, 2,621 ministers, and a membership of 593,613. A total of 18,913 new members was received in 1946 on profession of faith and 28,482 on certificate. Contributions for current expenses totaled $6,576,406; for benevolences, $6,323,602; for pastor's salaries, $4,167,886; building expenses $4,119,475; a grand total of $21,187,369. This was a year's increase of $2,663,186. Per capita giving was $36.04.

The 86th General Assembly met in Montreat, N. C., in late May, 1946. Overtures seeking withdrawal from the Federal Council of the Churches of Christ in America were defeated. The committee on stewardship was instructed to place the Council in the future in the denominational budget. A permanent committee on war relief was granted $250,000 for 1946-47. The permanent committee on cooperation and union was authorized to inquire as to possibility of simultaneous meetings of the General Assembly of Southern churches and the General

Assembly of the Presbyterian Church in the U. S. A., looking toward ultimate union. Representatives of agencies of the two groups met in Atlanta, Ga., in December, with a drafting committee to study proposals for reconstruction and consolidation of their respective boards. The Southern group set a goal of 500 new chapels or outpost Sunday Schools for 1946-47. A committee on Negro work was set up. Sunday School enrollment from latest figures was 423,012, with 652 outposts.

REFORMED CHURCH IN AMERICA

The 140th regular session of the General Synod was held at Buck Hill Falls, Pa., May 23-28. The denomination had 743 congregations with 176,167 members. A total of $7,023,225 was raised for all purposes, an increase of more than $1,000,000 over the year before. Average contribution per capita was $40. Receipts of the Board of Education were $321,565 from living donors and $29,839 from investments. This was the highest record in 118 years. The Board of Foreign Missions and the Woman's Board of Foreign Missions were merged on May 1, 1946, the latter having served as an auxiliary for 71 years. The new board had 27 men and 15 women. Contributions from living donors were increased over the previous year by $66,557. The committee on church union was instructed to draft a plan of union to be entered into with the United Presbyterian Church, to be ready for action March 1, 1947. The latter denomination took the plan under consideration in 1945, and by 1946-47 the two denominations had begun to work out exchanges of pulpits in local communities and exchanges of lecturers in their colleges and seminaries. Conferences of churchmen from both groups were being planned and carried out also.

SALVATION ARMY

General Albert Orsborn, sixth international General of the Salvation Army, who succeeded General George L. Carpenter upon his retirement in June, 1946, arrived in the United States in September, from London, for conferences the next three months with Salvation Army officers. The army's slogan "Marching Forward to a Better World" was being implemented in local communities throughout the country. The organization had 3,000 units of activity, for the most part in urban areas of the United States. These included hospitals, young women's residences, men's and women's emergency homes and lodges, hotels for men and for women, detention homes, social service centers, boys' clubs and youth centers, fresh-air and young people's camps, settlements and day nurseries, a missing persons bureau, vocational guidance and placement bureaus, service centers for armed services personnel, transient service bureaus, leagues of mercy composed of volunteers organized to visit the sick in hospitals and homes, leagues of laywomen working to improve home life, prison and police court work, and rural service units. General Orsborn spoke at a luncheon at the Hotel Waldorf-Astoria in New York City, with a radio broadcast, his first public address. The Salvation Army in the United States was busy in a nationwide project to promote aid of 500,000,000 starving people in war-torn countries, inviting relief packages for shipment and distribution under the Army's supervision. Up until Fall more than 4,100 packages, totaling 20 tons, were received and sent.

CHRISTIAN SCIENCE

The post-war activities of the Christian Science Church consisted chiefly in supplying workers for Veterans' Administration Hospitals in the United States and Canada and in serving military and naval personnel at training camps in the United States; also in serving occupation troops in the European and Pacific theaters. Their activities included rehabilitation work and the collecting and sending of food packages to churches and individuals in countries where needed. The Christian Science Publishing Society added a Spanish edition of the *Herald of Christian Science* to its group in French, German, Scandinavian, and Braille. The correspondents of the *Christian Science Monitor,* a daily publication of the Society, returned to Moscow and Rome in 1946. The board of directors of the Christian Science Church, in their report at the annual meeting in Boston in June, 1946 discussing church and government, stated: "It must be admitted that in working out the destiny of the race, the State and the Church have a common responsibility. It is their inescapable duty to promote unity, moral integrity and economic stability among people and nations. It is likewise their duty to cooperate in the promotion of such essentials to free government as private enterprise, individual liberty, and freedom of religious worship. These responsibilities, however, can be discharged successfully only in the degree that these two distinctly different agencies function independently of each other."

THE ROMAN CATHOLIC CHURCH

By John Gilchrist
National Catholic Welfare Conference

STATISTICS

Membership in the Catholic Church in the United States in 1946 totaled 24,402,124, according to figures given by the *Official Catholic Directory.* A record total of 18,667 Catholic parishes were in operation, with 13,667 of them having resident pastors. There were, in addition, 5,124 chapels and 5,084 mission churches.

There were 166 members of the American Hierarchy presiding over 101 dioceses and 22 archdioceses. These also include, for statistical purposes as American dioceses, the Vicariate-Apostolic of Alaska, Honolulu, Hawaii, the Abbatia Nullius of Belmont Abbey, N. C., as well as the Pittsburgh (Greek Rite) and the Ukrainian Greek Catholic Diocese.

The number of ordained clergymen is 38,980, the highest on record. There are 25,567 diocesan priests and 13,060 religious order priests. Among professed religious, the number of Sisters has increased to 139,218 and the number of Brothers to 6,721.

Elementary parish school pupils have increased by 41,190 to 2,070,202. Parish high school enrollments are 301,339, an increase of 22,720 over 1945. The number of seminarians has increased by 1,427 to 22,950. A total of 87,430 converts entered the Church during the year. Infant baptisms numbered 792,987, and the total number of deaths was 256,433, a decrease of 8,314.

The total number of American youths under Catholic instruction was 3,451,735, an increase of 245,931. One hundred and ten new institutions bring the total of Catholic general hospitals to 794, with a total bed capacity of 86,919. The number of patients treated annually in general hospitals totals 3,339,239, an increase of 48,418 over 1945 figures, and those treated in special hospitals and sanatoria, 58,687.

There are 45,219 children in 365 Catholic orphanages and infant asylums, and 19,308 children in foster homes.

BISHOPS' WAR EMERGENCY AND RELIEF COMMITTEE

The Bishops' War Emergency and Relief Committee was organized in 1940 as a centralized agency to meet war emergencies as well as relief needs of people suffering the devastation of war. A total of $2,500,000, raised in Catholic Churches throughout the United States, and distributed mainly through the Vatican on the basis of greatest need, continued to provide general relief to war victims, prisoners, refugees, and the homeless. Allotments were made to help relieve suffering and distressed victims of war, men, women, and children, from Poland, China, Belgium, France, Holland, the Scandinavian and Baltic countries, Greece, and a dozen other war-torn lands. Aid was given to refugees here and abroad through the Catholic Refugee Committee in New York.

Grants were also given toward the maintenance of Montezuma Seminary located near Las Vegas, N. M., where Mexican candidates for the priesthood are being educated.

WAR RELIEF SERVICES—NCWC

War Relief Services-National Catholic Welfare Conference administers a program of relief and assistance to refugees, victims of war, prisoners of war, and merchant seamen in the United States and in more than 40 foreign countries. This agency has accomplished a vast work of mobilizing Catholic efforts on behalf of the war-stricken, as well as the actual task of distribution of relief since the beginning of operations, Aug. 1, 1943. Records show that nine campaigns conducted by War Relief Services-NCWC from that date to May 1946, enabled the organization to administer over $70,000,000 worth of relief goods. Efforts were redoubled during 1946, in response to a plea of Pope Pius XII that the entire Catholic world mobilize to save Europe's war-stricken, especially the young.

In May, again in response to a plea from the Vatican to combat famine in war-ravished lands without discrimination, a "Food for Children of Europe and the Far East" campaign was conducted in 15,000 Catholic parishes throughout the United States. This drive resulted in the collection of 30,000,000 cans of food, 10,000,000 in excess of the original goal. More than 8,900,000 pounds of this collection were shipped to 12 countries in Europe and the Far East during a six-week period ended in July, and 1,200,000 pounds of canned foods were dispatched later to Poland, Greece, and Italy, countries where destitution was reported to be most widespread.

Relief channels to Germany were opened early in the year by authorization of President Truman, and War Relief Services arranged to supply one shipment a month, each consisting of 2,000 tons of food, clothing, and medical supplies for needy German civilians. Relief for Austria was also inaugurated with the shipment of 1,028,987 pounds of supplies. To aid India's starving millions, War Relief Services expedited the shipment of 1,000,000 pounds of flour.

Supplies in the amount of 3,900,000 pounds were reported en route to Germany in July 1946, and in the following month, War Relief Services announced the assignment of 250,000 pounds of whole wheat flour for the relief of people in North Africa. By October, more than 6,000,000 pounds of goods in all had been consigned to Germany, for distribution in the American, British, and French zones.

A nationwide campaign was launched in October 1946 for a minimum of $5,000,000 to carry on foreign relief work as well as the allied activities of the Bishops' War Emergency and Relief Committee. A "Clothe the War Stricken" campaign was held during December in 25 dioceses in areas most readily accessible to New York and San Francisco warehouses of War Relief Services.

The generosity of American Catholics toward the unfortunate in other parts of the world has also been indicated by many special contributions from Catholic groups, for the extension of the foreign relief work of War Relief Services. Among these were a gift of $60,000 from the St. Vincent de Paul Society, a charitable organization of Catholic men, and $10,000 from American Slovak Catholics.

Countless expressions of gratitude have been received from many countries, including Hungary and Belgium, and special thanksgiving services for supplies received were reported held in Holland and Luxembourg.

During the fiscal year October 1945–September 30, 1946, relief shipments weighing 55,187,224 pounds and valued at $15,325,388.13 were made. At that time, War Relief Services-NCWC had made 678 shipments to 36 countries, a total of 71,231,855 pounds, with a value of $21,963,051.

THE NATIONAL CATHOLIC COMMUNITY SERVICE

The National Catholic Community Service, Catholic agency of the United Service Organizations, planned to continue through 1947 its program of spiritual, recreational, and educational services to those in the armed forces. In five years of wartime activity, 700,000 NCCS volunteers served 250,000,000 men and women in uniform, war workers and their families in 500 clubs under NCCS direction. In response to community needs and demands, the National Catholic Community Service planned permanent establishments, emphasizing service to veterans and to youth and adult programs. During 1946, the services of NCCS were made available to patients of Veterans Administration hospitals and visiting members of their families.

DECLARATIONS OF THE AMERICAN HIERARCHY

On Nov. 13, 1946, 124 members of the Hierarchy in the United States assembled at the Catholic University in Washington, D. C., for the 1946 general meeting and continued in session for three days. At the close of the meeting, the Bishops issued a statement entitled "Man and the Peace," which was signed in their names by the Administrative Board of the National Catholic Welfare Conference.

The statement called upon nations and leaders to secure men everywhere in the enjoyment of their native rights. Stressing that the basic problem of man, his nature and rights, underlies all problems today, the statement warned that, unless those who bear the responsibility of world leadership are in basic agreement on what man is, confusion and conflict will continue to block the road to real peace. Respect for the rights and duties of man as an individual and as a member of civic and domestic society was held to be the first obligation of any government to its citizens. What a government can not do in the exercise of its own sovereignty, the Bishops stated, it can not approve or abet on the part of another government.

Concerning the conflict between Russia and the West, the document stated that the aftermath of war has revealed that Soviet totalitarianism does not acknowledge and respect basic human freedoms. The statement also contained pleas for the repatriation of prisoners of war, the humane treatment of displaced persons and refugees from persecution, and condemnations of the ruthless transplanting of peoples of Eastern Europe and of the deportation of thousands in areas of Soviet aggression to remote regions.

The statement concluded with a prayer for the peacemakers, begging Almighty God for forgiveness for past transgressions, and asking light and strength for those who must make the decisions in peace conferences.

The Bishops' Meeting also reviewed reports of the various departments and elected members to the Administrative Board of the National Catholic Welfare Conference, as well as to the Episcopal Committees on the American Board of Catholic Missions, the Society for the Propagation of the Faith, the Confraternity of Christian Doctrine, the National Organization for Decent Literature, the North American College (Rome, Italy) and Motion Pictures.

NEW NCWC BOARD MEMBERS

New members elected to the NCWC Board were the Most Rev. Archbishops James H. Ryan of Omaha, Robert E. Lucey of San Antonio, and Bishops William D. O'Brien, Auxiliary Bishop of Chicago, and Michael J. Ready, Bishop of Columbus. Other members re-elected included the Most Rev. Archbishops John Gregory Murray of St. Paul, Joseph F. Rummel of New Orleans, John J. Mitty of San Francisco, Richard J. Cushing of Boston, and the Most Rev. Bishops Karl J. Alter of

Toledo and John Mark Gannon of Erie.

At the meeting of the newly elected Administrative Board, following the general sessions, the Most Rev. John T. McNicholas, O.P., Archbishop of Cincinnati, was elected chairman of the NCWC Administrative Board.

CATHOLIC EDUCATION PROJECTS

The activities of the NCWC Department of Education, attained international scope with the formation of the Catholic Commission on Intellectual and Cultural Affairs, participation in the U. S. Educational Mission to Japan, and membership in the United Nations Educational, Scientific, and Cultural Organization. Other projects occupying the attention of the Department during the year included Federal Aid to Education, the National School Lunch Act, the G.I. Bill of Rights, and housing for veteran students.

A medal for the outstanding services of Catholic schools in the sale of war bonds and stamps was presented to the Education Department by the War Savings Division of the United States Treasury Department.

Two Catholic educational leaders were among 30 persons named to the Presidential Commission on Higher Education, whose purpose it was to re-examine the American system of higher education in terms of its objectives, methods, and facilities, and in the light of the social role it must play.

The National Catholic Educational Association and the National Catholic Welfare Conference were among 50 national organizations invited to name representatives to serve on the national committee to advise the State Department on matters relating to the UN Educational, Scientific, and Cultural Organization.

THE CATHOLIC PRESS

The Catholic Press showed a total circulation of 10,654,918, a gain of 1,500,000 in three years. Social projects of Catholic news coverage included the consistories at Rome in February 1946, the work of special foreign correspondents, syndicated material, and the inauguration of more popular features. A recently undertaken program of expansion showed promising results. Seven new Catholic publications were launched during the year. Publications in 34 countries now subscribe to the NCWC News Service, while Noticias Catolicas, the Spanish-language news service, serves over 60 papers in 18 countries.

SOCIAL ACTION

The establishment of the UN and the problem of atomic energy placed new projects before the NCWC Social Action Department, which worked for representation of non-governmental organizations with the United Nations, was represented at several international meetings, and assisted in the organization of the National Committee on Atomic Information.

This Department also arranged four industrial conferences, held preliminary meetings relative to the establishment of a committee on Negro problems, and expanded the work of the Family Life Bureau which held its annual conference at the Catholic University of America in Washington, D. C., Feb. 5-8.

In a special "Labor Day Statement," the first of its kind to be issued by the Social Action Department, an early national meeting of freely chosen representatives of organized labor, management, agriculture, and the professions was advocated, to discuss establishment of an occupational group system for organized cooperation for the general economic welfare.

Under the joint auspices of the National Committee of Cuban Social Action and the NCWC Social Action Department, the Second Inter-American Seminar of Social Studies was held in Havana, Jan. 2-10, 1946. Observers from Spain, France, Portugal, The Netherlands, Great Britain, as well as from the International Labor Office, attended. Eighty-seven delegates from 24 nations and colonies of the Western Hemisphere exchanged ideas and experiences. The general theme—Catholic Social Action in the

Americas—was considered under the aspects of agriculture, industry, labor movements, and race relations. Discrimination on the basis of race and color was condemned, Catholic social doctrines reaffirmed, and the principle of an Inter-American Office of Catholic Social Action was approved.

LAY ORGANIZATIONS' PROGRESS

The National Council of Catholic Men was represented by councils in 26 dioceses. The year was marked by the vigorous growth of Catholic radio work. "Faith in Our Time," the third nationwide radio program under NCCM sponsorship, was inaugurated. The work of the National Organization for Decent Literature continued to be effective.

CATHOLIC WOMEN'S ORGANIZATIONS

The National Council of Catholic Women, a union of Catholic women of the United States instituted 26 years ago, now comprises 4,598 affiliated organizations on the national, state, diocesan, and local levels. Its 1946 program continued to emphasize the development of Religious Discussion Club leaders, the sponsorship of marriage forums, Catholic libraries, retreats, and diocesan family life programs. The 23rd Convention of the National Council of Catholic Women, held in Kansas City, condemned Communism and stressed the position of women in a truly Christian society.

THE CONFRATERNITY OF CHRISTIAN DOCTRINE

In 1946, the Confraternity of Christian Doctrine was officially established in 21 archdioceses and 91 dioceses. Seventy prelates and 50,000 other persons from all parts of the world attended the eighth and the greatest Confraternity of Christian Doctrine Congress, held in Boston in October. The delegates were addressed by radio by Pope Pius XII. Renewed emphasis on confraternity work was placed on the teaching of religion to uninstructed adults, children, and youth. More than 500,000 prayer leaflets were distributed for the promotion of religious instruction.

THE CONSISTORY AND NEW CARDINALS

One of history's most notable events took place when four United States Cardinals-Designate flew the Atlantic to the Consistories at Rome, where, at brilliant and solemn ceremonies which attracted worldwide interest and attention, 28 new Cardinals received the Red Hat, emblem of their office, from Pope Pius XII. The newly appointed American Cardinals were Archbishops John J. Glennon of St. Louis, Edward Mooney of Detroit, Samuel A. Stritch of Chicago, and Francis J. Spellman of New York. Not long after, while public receptions and solemn religious rites marked the homecoming of the prelates, the country was saddened by the death of Cardinal Glennon, in Ireland, while en route home. The first Chinese Cardinal, Thomas Tien, also toured the United States during the year, and Cardinal Bernard Griffin became the first British Cardinal to visit this nation when he arrived to receive, with President Harry S. Truman, an honorary doctorate at Fordham University's centennial celebration.

CANONIZATION OF MOTHER CABRINI

Of particular interest to Catholics of the United States were the canonization ceremonies of Mother Frances Xavier Cabrini, July 7, the first United States citizen so honored. Thirty thousand persons were present in the Basilica of St. Peter's in Rome when Pope Pius XII solemnly proclaimed the foundress of the Order of Missionary Sisters of the Sacred Heart a Saint.

OTHER EVENTS

An event unprecedented in American history took place during the year when the Rev. Daniel Ivancho, pastor of St. Mary's Greek Rite Church, Cleveland, was consecrated a Bishop, to be Coadjutor to Bishop Basil Takach of the Pittsburgh Greek

Rite Diocese. This was the first time a Bishop of the Greek Rite had been consecrated in this country.

Two American Bishops, the Most Rev. John F. O'Hara, C.S.C. of Buffalo, N. Y. and the Most Rev. Michael J. Ready of Columbus, made a 19-day visit to Japan at the invitation of the Japanese Hierarchy, and with the approval of General Douglas MacArthur, and the War and Navy Departments. Received by General MacArthur and Emperor Hirohito, the Bishops visited ten cities and spoke to hundreds, particularly with reference to post-war problems of reconstruction and the development of missionary personnel. The Most Rev. Joseph P. Hurley, Bishop of St. Augustine (Fla.), appointed regent *ad interim* at the Apostolic Nunciature of Yugoslavia, arrived in Belgrade, and the Most Rev. Aloisius S. Muench, Bishop of Fargo, N. D., was named official representative to serve as liaison between the Church and U. S. Military Government in the American zone in Germany.

The NCWC Youth Department was represented among delegates of youth organizations of the country who met with President Truman to discuss plans for cooperation in easing world famine. The NCWC Bureau of Immigration reported completion of arrangements for representatives to meet several large groups of displaced persons scheduled to arrive in harbor. In cooperation with other national social agencies, the National Catholic Welfare Conference workers were ready to aid immigrants through customs and other procedure before turning Catholic DP's over to the Catholic Committee for Refugees for further care and placement. One hundred and eighty-five Polish war orphans arrived from Mexico for placement in orphanages in several cities.

Compilation of war records shows notable service on the part of Catholics, both in the armed forces and in civilian industries in the Second World War. The first chaplain in the nation's history to receive the country's highest honor, Father Joseph T. O'Callaghan, S.J., of the Navy, received the Congressional Medal of Honor from President Harry S. Truman.

THE EASTERN CHURCHES

By E. R. Hardy, Jr.
Berkeley Divinity School

GREEK (HELLENIC) ORTHODOX CHURCH

The biennial Convention of the Greek Orthodox Church was held in Boston Nov. 3-7. The Convention was marked by a desire to advance the activities of the Church in view of the needs of American life as well as in an Orthodox spirit. An important step forward was the purchase of an estate at Brookline, announced at the Convention, to which the upper classes of the Seminary have been moved from Pomfret, Conn., and where the residence of Bishop Athenagoras of Boston has been established. This is intended to be the beginning of an Orthodox School of Theology and other higher studies at Boston.

Other plans launched at this Convention were the formation of a Missionary Society and the revival of the ancient Order of Deaconesses, which existed at Constantinople even in the Middle Ages. The Convention passed a resolution in favor of permitting the marriage or remarriage of the clergy after ordination; Orthodox custom has for a long time allowed the clergy to be married, but only if married before they are ordained. Since the Greek Church in America is under the jurisdiction of the Patriarch of Constantinople, this resolution has been forwarded to him for such action as he may feel able to take. The Syrian

Metropolitan and the Ukrainian Bishops were present at the Convention; its opening Liturgy was held in the Boston Arena, no Greek Church in Boston being adequate for it. Archbishop Athenagoras in his address stressed the importance of English-speaking clergy for this country.

A certain number of clergy are now coming from Greece for the service of the Church in America. Under arrangements made by Prof. Alivisatos of Athens, in cooperation with the World Council of Churches, 15 students from Greece are now studying in American theological schools (mainly of the Episcopal and Methodist Churches) in preparation for further service to the Church of Greece.

RUSSIAN ORTHODOX CHURCH

The negotiations between the Russian Church in America and the Mother Church in Russia have continued to command much interest outside as well as within the Russian Church. Archbishop Alexei of Rostov, having failed to arrive at an agreement with the American Bishops, left for Russia early in March, 1946. Two Bishops have come over to the Patriarchal Church, represented in America by Metropolitan Benjamin–Alexei, formerly of Alaska, who has returned to Russia, and Makary of Brooklyn, now at the old Russian Cathedral in New York, which from 1923-1945 was in the hands of the dissident "Living Church" group. The Carpatho-Russian parishes under Archbishop Adam are also attached to the Moscow jurisdiction.

The greater number of Russian parishes in America, however, remain with the provisionally autonomous jurisdiction of Metropolitan Theophilus. A Sobor of clergy and lay delegates was held at Cleveland, Nov. 27-29. This gave the general body of the Russian Church its first opportunity for formal expression on the issue of relations with the Church in Russia. After much discussion, a resolution was passed expressing a desire to remain spiritually connected with the Patriarchate of Moscow, but without administrative subordination. The Sobor also voted to break all administrative connection with the Synod of Russian Bishops in Exile (formerly at Karlovtsi in Jugoslavia and now at Munich and Geneva), with which the American Church has been affiliated since 1936.

The influence of the younger, English-speaking generation was conspicuous at this Sobor; it was marked by the conduct of proceedings partly in English and by the approval of the minutes in English as well as Russian. The younger clergy now being trained at St. Vladimir's Seminary, New York, are generally sympathetic to this group; it is being planned to expand and improve the work of St. Vladimir's and to turn the "Pastors' School" at St. Tikhon's Monastery, South Canaan, Pa., into a school for choir directors. The Federation of Russian Orthodox Clubs (young people's societies) held its first postwar convention at Pittsburgh in September.

Metropolitan Theophilus has consecrated Archimandrite John Zlobin, long priest of the old Cathedral at Sitka, to the See of Alaska, which has been vacant for some time. Bishop John has returned to Alaska, and is making plans for the training of catechists in view of the many vacant churches in that diocese. An interesting group that arrived in America in the fall are the Brothers of St. Job, a monastic fraternity devoted to the printing of liturgical books in Church Slavonic. For the last 20 years their work has been carried on in Slovakia; they are now resuming it at the Russian Monastery at Jordanville, N. Y.

OTHER ORTHODOX CHURCHES

On June 2, Bishop Nicholai of Zicha and Ochrid dedicated a chapel in the Serbian Orthodox Cathedral in New York in memory of Prof. Michael Pupin, the distinguished Serbian-American physicist of Columbia University. On June 9, Bishop Nicholai preached in Calvary Church, Pittsburgh, Pa., at a Vesper service under the auspices of the Orthodox and

Anglican Fellowship, Bishop Benjamin of Pittsburgh presiding. The Serbian Church has enlarged the facilities of its summer camp at St. Sava's Monastery, Libertyville, Ill., and is taking an active part in Serbian War Relief, especially for displaced persons of Serbian Orthodox faith.

The Rumanian and Bulgarian Churches are once more in touch with their Mother Churches. Bishop Andrei of the Bulgarian Church, who now holds the title of Bishop of North and South America and Australia, has now established his headquarters at Holy Trinity Bulgarian Cathedral, Madison, Ill. The Rumanian Synod expects to send an official visitor to the Rumanian Church in America, possibly Bishop Policarp, formerly in this country.

The activities of the Carpatho-Russian Church under Bishop Orestes, whose Cathedral is at Bridgeport, Conn., include a seminary and a school for choir leaders.

ORTHODOX CHURCHES ABROAD

In February 1946, Maximos V succeeded the late Patriarch Benjamin as Patriarch of Constantinople. Much was hoped from this relatively young and vigorous prelate, Bishop for the last 15 years of the Diocese of Chalcedon. Unfortunately it was reported at the end of the year that serious illness may require his resignation.

The Patriarchate of Moscow has continued to expand its activities. There are now 67 Bishops in Russia, several theological academies are in operation, and a number of parish churches and some monasteries have been reopened. The Moscow Academy has returned to its old quarters in the Monastery of St. Sergius near Moscow. The Patriarchate maintains its contacts by the exchange of visits with other Orthodox Churches; Patriarch Nicodim of Rumania has visited Patriarch Alexei in Moscow, and Metropolitan Gregory of Leningrad has visited Jerusalem. After the death of Metropolitan Eulogius of Western Europe on Aug. 9 the Patriarch appointed Archbishop Seraphim, formerly connected with the Karlovtsi Synod, as his successor. Most of the Russian clergy and parishes in Western Europe, however, considered this an unwarranted decision, and preferred in a diocesan conference of Oct. 16-20 to retain their connection with the Patriarchate of Constantinople. Most of the Russian Churches in China and Manchuria have returned to the jurisdiction of Moscow. Bishop Benjamin of Pittsburgh has gone to visit the Orthodox Church of Japan, in origin a Russian Mission, and may stay there as Bishop.

The Orthodox Churches of the Balkans continue closely bound up with the political situation. On the return of King George II of Greece, Archbishop Damaskinos retired from the responsible post of Regent. Patriarch Gavrilo has returned to Serbia, where the present Yugoslav regime hopes to model its church policy on that now prevailing in Russia. In Bulgaria, the Fatherland Front government has recognized the importance of the Church as a national institution; much was made in June of the celebration of the thousandth anniversary of St. John of Rila, founder of a famous Bulgarian monastery.

OTHER EASTERN CHURCHES

Bishop Tiran of the Armenian Church has been prominent in the cultural activities of American Armenians, and in the program for the return of Armenian displaced persons to Armenia. He is now bringing Armenian theological students from the Near East to this country for the service of his parishes.

Mar Shimun XXIII, Patriarch of the Assyrians, now residing in Chicago, is making arrangements for the consecration of additional Bishops for his Church, for which purpose he hopes to be allowed to visit Syria.

The Coptic Church (not represented in the United States) has elected a new Patriarch, Amba Yousab. The Abyssinian Church has been allowed representation in the Coptic Synod, but desires a greater measure of local autonomy.

JUDAISM AND JEWISH COMMUNAL AFFAIRS

By Harry Schneiderman
Editor, *American Jewish Year Book*

GENERAL

In 1946, the American Jewish community was concerned with solving the problems of Europe's homeless Jews. This problem became closely linked with the problem of Palestine. The outstanding feature in the political sphere, therefore, was the report of the Anglo-American Committee of Inquiry on Palestine. Among its recommendations, none of which had been implemented by the end of 1946, two created most interest and discussion. These were the proposals for immediate transfer to Palestine of 100,000 displaced persons, with simultaneous provision by other governments for absorption of the remaining displaced persons and for abolition of the land-purchase limitations instituted in the White Paper of 1939.

Together with the widespread distress in European countries, the failure to carry out the Anglo-American Committee's recommendations compelled American Jews to intensify their overseas relief activities. In addition to meeting this pressing obligation, American Jews increased their religious and cultural activities and, at the same time, vigorously reasserted their civic rights threatened by a postwar resurgence of numerous un-American groups.

UNITED STATES GOVERNMENT ACTION ON PALESTINE

In 1946, President Truman continued his efforts to reopen the doors of Palestine for the displaced Jews of Europe. Late in 1945, those efforts had resulted in the establishment of the Anglo-American Committee of Inquiry. At its hearings in Washington, D. C., in January, 1946, the Committee heard testimony urging the repatriation of displaced persons in Palestine. Advocates of this action included Earl J. Harrison, American representative to the Intergovernmental Committee for Refugees who had studied the situation in Europe, and Dr. Joseph Schwartz, European director of the American Jewish Joint Distribution Committee. The official Zionist case was presented by Rabbi Stephen S. Wise, chairman of the American Zionist Emergency Council, Dr. Emanuel Neumann, vice-president of the Zionist Organization of America, and others. Among the other Jewish agencies asked to testify were the American Jewish Committee, whose president, Joseph M. Proskauer, pleaded for the abrogation of the British White Paper on Palestine and for the admission of 100,000 Jews; and the American Council for Judaism, the only Jewish organization which opposed both the creation of a Jewish State and large-scale Jewish immigration as solutions to the problem.

After subsequent hearings in London and Palestine, the Committee of Inquiry issued a 40,000-word report April 26, 1946. Analyzing the position of the Jews in various European countries and discussing the causes of political strife in Palestine, the report denounced the White Paper of 1939. It recommended the speedy admission of 100,000 Jews to Palestine as well as the acceptance of additional refugees by other countries. The Committee expressed the opinion that the mutual hostility of Jews and Arabs rendered an immediate grant of independence impossible. However, it advocated the ultimate creation of a binational state, with safeguards against the domination of either side by the other. In the meantime, the Committee suggested that, pending the early establishment of a United Nations trusteeship, Great Britain's mandate over Palestine be continued.

While the Committee's recommendation to abrogate the restriction on immigration and land purchase met with almost unanimous approval in the United States, Zionist groups took strong exception to the rejection of the idea of a Jewish State. On May 20, the British and American governments invited the Jews and Arabs to submit their views on the Committee's report.

The American Jewish Conference and the American Zionist Emergency Council declined the State Department's invitation to submit comments on the ground that discussions would serve only to delay the transfer of displaced Jews to Palestine. On June 6, in the United States Senate, 11 members criticized the failure of the British and American governments to effect the immediate admittance of 100,000 Jews. Appeals to hasten their transfer also came from the American Jewish Committee, the American Jewish Conference, and the Zionist Emergency Council. To help solve the problem, President Truman appointed a committee, composed of the Secretaries of State, Treasury, and War, to negotiate with British cabinet members on the implementation of the report of the Anglo-American Committee of Inquiry.

Another storm of protest arose in America in July when the British cabinet committee suggested federalization of Palestine. Members of Congress condemned the plan, and Judge Joseph C. Hutcheson, American chairman of the Anglo-American Committee of Inquiry, described it as a "complete sell out," and a violation of the British Mandate. Jewish organizations joined in the strong protest and again asked for the transfer of 100,000 Jews to Palestine.

In October, President Truman sent a new appeal to Great Britain asking immediate substantial immigration of Jews without awaiting settlement of the future status of Palestine. He also urged the acceptance by Great Britain of a compromise between the cabinet committee's proposal and the Jewish Agency's plan to divide Palestine into Jewish and Arab states. The President pledged that the American Government would transport Jews from Europe to Palestine and might grant economic assistance to that country if "a workable solution" were devised. The plan was flatly rejected by the British Foreign Office which declared that no immigrants would be admitted into Palestine until its "whole political future" was settled. King Ibn Saud of Saudi Arabia termed President Truman's suggestions "inconsistent" with previous pledges by the United States Government. In reply, the President stated that this country always has supported and continued to support the establishment of a National Home in Palestine for the Jewish people.

Still more active diplomatic participation by the United States in finding a solution to the Palestine problem was indicated by the transfer of the matter from the White House to the State Department. A staff of experts was assigned to assist Secretary of State Byrnes in preparing for detailed discussions with British Foreign Minister Bevin. One result of these discussions was the American Government's decision to send an official observer to the British-sponsored Palestine Conference of Jewish and Arab leaders in London in January, 1947.

ZIONIST ACTIVITIES

Action taken by the American Zionists during 1946 revolved about the Anglo-American Committee's recommendations and subsequent British proposals which sought to defeat Zionist aspirations in Palestine.

At the 49th Annual Convention of the Zionist Organization of America, (ZOA), in Atlantic City at the end of October, its president, Dr. Abba Hillel Silver, launched a scathing attack upon Great Britain, condemning the partition plan and calling for resistance against the "illegal power" which keeps immigrants out of Palestine.

The convention adopted a number of resolutions which rejected proposals for the partition of Palestine; demanded the establishment of a Jewish state; asked that the Jewish Agency, which had committed itself on a partition plan for Palestine, submit any future proposals of this kind to the World Zionist Congress for approval; and urged that there be no participation of Jews in the January 1947 London conference on Palestine which it described as a "dilatory device" invented by the British Government to "deflect public criticism" of its Palestine policy.

A second set of resolutions called for the immediate creation of "an authoritative overall body" to conduct the "political effort on behalf of Zionism in the United States" and which was to be constituted "with due regard for both the interest of the Jewish Agency and the vital and indispensable role which must be played by the American Zionist Organization." The convention expressed appreciation to the President, Congress, and the people of the United States, for their support of Zionism and their advocacy of the admission of refugees to Palestine.

Hadassah, the women's Zionist organization, outlined a plan for immigrant health service in Palestine, including hospitalization of all sick newcomers, convalescent care, a special tuberculosis prevention and cure program, and enlarged child welfare activities. During 1946, this organization, with a membership of 200,000, collected nearly $5,800,000, all of which was sent to Palestine.

The attitude of American Jews toward Zionism was reflected in a Gallup poll, released in January, 1946. It showed that 80 per cent of all Jews in the United States, who followed the discussion about the fate of the Holy Land, favored the establishment of some form of a Jewish commonwealth; that 10 per cent were opposed to it, and that 10 per cent did not express any opinion on the matter.

OVERSEAS RELIEF

Faced with the challenge of assisting in the physical maintenance and spiritual survival of the 1,400,000 Jews of Europe (outside the Soviet Union), the Jewish community of the United States set for itself the record goal of raising $100,000,000 for the United Jewish Appeal for Refugees, Overseas Needs and Palestine in 1946. The goal was oversubscribed by about $3,000,000, and the total was divided as follows: the Joint Distribution Committee, $58,350,000; the United Palestine Appeal, $43,872,000; and the United Service for New Americans (incorporating National Refugee Service), $1,082,025.

In the meantime, however, the task of aiding Europe's Jews had increased in complexity and expense. As a result, the UJA conference, in December 1946, embarked upon one of the most ambitious fund-raising efforts for a humanitarian purpose in the history of the country. The quota set for 1947 was $170,000,000.

JOINT DISTRIBUTION COMMITTEE

The initial task of rescue and emergency relief undertaken by the JDC during and immediately after the war has been broadened to include the reconstruction and resettlement of Europe's Jewry. Its duties now include a program of economic rehabilitation, vocational training, communal reconstruction, educational and cultural activities, and assistance to those wishing to emigrate.

The scope of the JDC activities in the various countries differed according to specific requirements. Whereas in Eastern Europe, for example, expenditures were limited to providing the bare necessities of life, in countries such as Belgium and Italy, where local relief agencies or UNRRA housed and clothed the Jews, funds could be used for religious, educational, or other programs. JDC's migratory service extended to financing thousands of displaced persons who went to Palestine and assisting several hundred who were admitted to the United States under President Truman's directive of Dec. 22, 1945.

HEBREW SHELTERING AND IMMIGRANT AID SOCIETY

In the wake of the retreating Nazi armies, HIAS entered Europe and set up offices for the purpose of aiding surviving Jews able to emigrate. The number of offices in a country varied according to its needs. Thus, in Poland, Germany, Italy, and France, where the largest number of refugees was found, from five to ten offices were established in places with the largest refugee population. In other countries, such as Hungary, England, Sweden, Belgium, Switzerland, Portugal, Turkey, Palestine, and China, one to three offices are maintained. HIAS offices and affiliates are also found in Latin American countries.

In cooperation with existing private and governmental agencies, such as UNRRA and the Intergovernmental Committee for Refugees, HIAS aided in preparing Jewish DPs for emigration to the United States, Palestine, and elsewhere. Its immigration staff was called upon by the United States Army and President Truman's Special Committees to implement his directives and to assist in the preparation of identification papers used by displaced persons in lieu of a passport.

WORLD ORT UNION

During 1946, the World ORT (Organization for Rehabilitation through Training) Union continued on a larger scale its service of training Jews in occupational skills. The ORT has trained about 19,000 Jewish men, women, and children in 18 countries. In addition to instruction, the ORT also provided raw materials, machines, and tools for needy artisans.

SOCIETY FOR THE PROTECTION OF THE HEALTH OF JEWS

The work of OSE, the worldwide organization dealing with problems of medical assistance, hygiene, and child care among the Jews, operated in most European countries. To eastern Europe where the need was the greatest, OSE sent physicians, nurses, child-care guardians, concentrated foods, surgical and laboratory equipment. In France, Belgium, and Switzerland, many children's homes, clinics, canteens and other institutions were opened to help refugees. In the displaced persons camps in Germany and Austria, OSE physicians and nurses cooperated with UNRRA, the JDC, and military agencies in restoring the health of the Jews. Additional relief was enlisted by the establishment of a "Foster Parent Plan" through which people all over the world may help orphans and semi-orphans in European OSE institutions.

REFUGEES AND IMMIGRATION

The imperative need of many of Europe's surviving Jews to emigrate increased immigration activity in America. The initial step was taken by President Truman, whose directive on Dec. 22, 1945 provided for the annual immigration of a maximum of 39,681 refugees and displaced persons of all faiths from American occupation zones in Europe and for the reestablishment of immigration facilities in those zones. The order's immediate result was the liquidation, a few weeks later, of the War Relocation Authority's Emergency Refugee Shelter at Fort Ontario, Oswego, New York and the resettlement of the majority of its 923 residents as regular quota immigrants in the United States.

The most encouraging development for the homeless Jews, however, was the arrival in New York in May, 1946 of 1,361 refugees and displaced persons as the first quota immigrants from Europe. On May 20, the *S. S. Marine Flasher* brought 795 DPs and four days later 566 refugees more disembarked from the *S. S. Marine Perch.*

The immigrants were aided notably by the Hebrew Sheltering and Immigrant Aid Society and the United Service for New Americans. The latter organization was created Aug. 1, by consolidating the National Refugee Service and the National Service to Foreign Born Department of the National Council of Jewish Women. Its services include guidance to Americans wishing to bring relatives from Europe to the United States, meeting ships and routing new arrivals to their relatives in other cities, resettlement of immigrants in communities throughout the nation in cooperation with local agencies, retraining and securing employment, aid in naturalization procedure, and assistance in learning English and the customs of the country.

By the end of 1946, however, immigration under President Truman's directive fell short of the maximum of 39,681 persons. For example, a report based on a ship-by-ship compilation of sailings from the American embarkation center at Bremerhaven, Germany, showed that only 6,213 immigrants of all faiths from the DP camps had entered the United States. Aside from the inadequate quota system, a chief cause of the low immigration total was the bottleneck in shipping. The President attempted to overcome this in December by assigning four ships to expedite the transportation of 2,100 displaced persons. Another great obstacle to immigration was the lack of adequate staff in American consular offices to issue visas.

Several times during 1946, President Truman urged Congress to liberalize existing immigration laws. His viewpoint found support throughout the country. Following a recommendation by Mayor William O'Dwyer, the New York City Council passed a resolution urging that the United States give haven to 250,000 displaced Europeans. Two weeks later it raised the figure to 500,000 DPs of all faiths. The Citizens Committee on Displaced Persons, under the chairmanship of Earl G. Harrison, former U. S. Commissioner of Immigration and Naturalization, demanded the admission of 400,000 refugees. Seventy prominent Americans, including Bishop Francis J. McConnell, sent a Christmas appeal to the President asking for the immediate entry of 100,000 displaced Jews into the United States. The same recommendation was made earlier by Rabbi Philip S. Bernstein, adviser on Jewish affairs to General Joseph T. McNarney, commander of United States Armed forces in Europe. In a united effort to save the Jews of Europe, the American Jewish community made pleas and suggestions.

There also was opposition to increasing immigration. For example, in May, a number of Congressmen, supported by spokesmen for the American Legion and the Veterans of Foreign Wars, attempted unsuccessfully, in a section of the proposed Gossett Bill, to cut quotas by 50 per cent for the next ten years. In addition to these, Senator Richard B. Russell, chairman of the Senate Immigration Committee, and Senator Elmer Thomas, of Oklahoma, also advocated curbs on present immigration.

WAR RECORD

According to statistics on the Second World War, published by the Bureau of War Records of the Jewish Welfare Board, more than 550,000 Jewish men and women served in the armed forces of the United States. The total number of known Jewish casualties was close to 25,000, including 7,500 known dead; 17,500 were recipients of citations for valor and merit, totaling 33,446 awards.

SOCIAL WELFARE

With the disappearance of war emergency pressure in 1946, the American Jewish community began to make plans for the improvement and expansion of health and welfare agencies, not only for the marginal lower income groups but for all classes of the Jewish population. Federations of local philanthropies throughout the country raised approximately $35,000,000 for hospitals, community centers, institutions for the aged and religious institutions.

RELIGIOUS ACTIVITIES

The Synagogue Council of America, the coordinating agency for Orthodox, Conservative, and Reform Jewry, adopted a peace-time program in April 1946. It called for the stimulation and advancement of religious life in the American Jewish community and assistance to world Jewry in agreed areas; representation of the totality of religious life of American Judaism, whether before the government, within Jewish secular organizations or in cooperation with non-Jewish religious bodies; defense of Jewish religious beliefs and practices wherever they may be attacked; cooperation with Christians in religious activities and in religious pronouncements on social justice and other moral issues.

In carrying out this program, the Council engaged in various activities. A conference of the Social Justice Commissions of the Federal Council of Churches, the National Catholic Welfare Conference, and the Synagogue Council achieved concurrence on minimum wages, full employment practices, labor unions, and employers associations. The agencies jointly sponsored National Family Week, May 5-12, designed to strengthen the spiritual foundations of family life.

As an effort to rehabilitate religious life in France, the Synagogue Council initiated a plan under which a Jewish community in the United States "adopts" and aids a Jewish community of France. Rabbi Alexander S. Rosenberg was appointed liaison officer between the American Military Government officials in Germany and religious authorities.

In America, vast building and expansion projects were undertaken by national religious agencies, seminaries, and individual congregations. Attempts were made to stimulate religious adherence among the Jews. The importance of developing greater interest in religion was stressed by President Truman on the occasion of the launching of the "American Jewish Cavalcade," a nation-wide religious emphasis program, by the Union of American Hebrew Congregations (Reform).

EDUCATIONAL AND CULTURAL ACTIVITIES

The major facts culled from a study on Jewish educational activities conducted by the American Association for Jewish Education were as follows: the number of children enrolled in all Jewish schools was 231,028, as compared with 190,000 in 1940; curricula were extended and greater emphasis was placed on the Hebraic element; departments of education in Jewish institutions of higher learning were enlarged in view of the dearth of qualified teachers and administrators in Jewish schools; community funds have made larger appropriations for education than in the past.

Efforts to give a new impetus to Jewish education, such as the observance of Jewish Education Month in September, continued. The activities of several national organizations also were directed to this end. For instance, the American Association for Jewish Education organized a Department of Educational Consultation which was to assist communities in reorganizing their educational systems; the National Academy for Adult Jewish Studies held a conference on "New Directions for Adult Jewish Education"; the Board of Higher Education of the Union of Orthodox Rabbis and the Rabbinical Board of Greater New York conducted an extensive enrollment campaign for the Yeshivah schools.

Important work also was done in stimulating an understanding of Jewish culture. The Jewish Education Committee sponsored the study of art, music, and theater appreciation. The Yiddish Scientific Institute and the Central Yiddish Culture Organization published several works in the Yiddish language. The number of books on Jewish subjects distributed by the Jewish Publication Society of America and the Jewish Book Council of America reached a new high. To evoke still greater interest in such publications, Jewish Book Month was observed in November. In the field of music, the activities of the Society for the Advancement of Jewish Musical Culture were augmented by the newly created Society for the Advancement of Jewish Liturgical Music.

THE KU KLUX KLAN

As had been anticipated, with the end of the war, the professional anti-Semites came out into the open and publicly resumed their divisive activities. Old leaders reappeared and were joined by new ones but, in contrast to the pre-war period, few of them have important following, influence, or financial means.

Among the more important divisive groups in action during 1946, easily recognized by their overt anti-Semitism, were the Ku Klux Klan and synonymous groups, the Gerald L. K. Smith-Father Terminiello union, and the coalition of professional Arabian agitators.

Klan leaders openly met in convention in Atlanta, Ga. in May 1946, followed by a torchlight ceremony on Stone Mountain. Burning of fiery crosses and violence against Negroes were reported from various parts of the country. Klan organizers were especially active in the Southeast and Midwest.

Resurgence of the Klan, however, immediately met with public counteraction and widespread repudiation. Within a short period of time, four states revoked the corporate local charters of the Klan, other states began investigations on the status of the Klan within their borders, and the United States Treasury Department started a suit against the Klan for back taxes. New York State, however, is the only state which has an anti-Klan law, making it compulsory for the Klan to file membership rosters.

Far from being altogether removed as a menace to democracy the Klan has returned to quiescence, leaving the field open for its membership to function under various pseudonyms. Georgia, where Eugene Talmadge's campaign openly invited Klan support and where, upon his death, his son became the rallying point for Klan elements, promises to become a refuge for hate-mongerers.

The Columbians, Inc., an anti-Negro, anti-Jewish organization of terrorists, clothed in Nazi-like uniforms, was organized in Georgia during the fall of 1946. At the end of the year, its leaders were under charges and indictment arising out of acts of terror perpetrated by the organization against Negroes; it was faced with repudiation by all respectable elements and with the complete disintegration of the group.

SMITH AND TERMINIELLO

Gerald L. K. Smith and Arthur W. Terminiello, during the first half of 1946, were aided and abetted by unwarranted publicity, picketing, and riots. Thus, these rabble-rousers found an easy sounding board in the American press, with the result that their endeavors were constantly kept alive and prevented from sinking into oblivion. The curious as well as the fanatic added to the good attendance at Smith's meetings. In August 1946, an aroused public and press, weary of the publicity-nurtured Smith, began to see the wisdom of ignoring him. The number of pickets dwindled at his meetings, counter-demonstrations were dignified and led to no rioting, attendance diminished, and, consequently, collections to cover his expenses fell off substantially. The "martyr," who in the first half of 1946 blazed a trail of hatred and divisiveness, was shorn of most of his glory by the end of the year and was put on the defensive by democratic America.

Terminiello, who had been suspended in 1945 by his Bishop for hate-mongering activities, and became affiliated with Smith soon after, severed his connections with Smith in the summer of 1946 and conducted his own activities independently. His following is very small, and he receives little or no publicity.

PROPAGANDA

These various types of poison peddling that have been described also were carried on by other propagandists of lesser significance. For example, several of the old pro-German movements reconstituted their organizations, reformulated their propaganda tactics, and somewhat revamped their old arguments. They also camouflaged their true intentions under the guise of relief activities.

In Chicago, as well as in a few other sections of the country, the 1946 election was significant for the number of overt anti-Semites who sought political office. All were soundly defeated by the electorate.

The mass sedition indictment, which had ended in a mistrial in December 1944 with the death of the presiding judge, was dismissed in November 1946.

In the light of the events of 1946, it appeared that the American public had become more aware of anti-Jewish machinations wherever and in whatever disguise they were manifested and understood more clearly that such maneuvers ultimately serve anti-democratic ends.

DISCRIMINATION IN EMPLOYMENT

Upon its expiration June 30, 1946, the Fair Employment Practices Committee reported to President Truman that a survey conducted in 15 cities showed a marked rise in discrimination against Jews seeking jobs. Since investigation proved that in New York and New Jersey, where fair employment practices are in effect, discrimination was lower than in other states, Jewish organizations in the National Community Relations Advisory Council were active in strengthening the National Council for a Permanent Fair Employment Practice Committee, a group which leads the movement for national legislation.

DISCRIMINATION IN EDUCATION

Discrimination in educational institutions also was given attention. Among the many exposés of bias on campuses was a report by the Mayor's Committee on Unity in New York in the spring of 1946. As a remedy for racial and religious bias, which was found most prevalent in medical colleges, the Mayor's Committee suggested establishing a New York State University. The state legislature defeated a bill to appropriate $50,000,000 for this purpose. However, it passed a resolution authorizing a commission, to be appointed by the Governor, to examine the whole question.

Cognizant of widespread discrimination in education, President Truman pledged the unsparing efforts of the National Commission on Higher Education to eliminate bias from the country's colleges. To combat all hatred and intolerance in the nation, he created a Civil Rights Committee to study and recommend legislation and other measures "for the protection of the civil rights of the people of the United States."

PERIODICAL PUBLICATIONS

Advance (Congregational)
14 Beacon Street, Boston.
America (Jesuit)
329 W. 108th St., New York City.
American Hebrew
48 West 48th Street, New York City.
Catholic World
401 West 59th Street, New York City.
Christendom
297 Fourth Ave., New York City.
Christian Advocate
740 North Rush St., Chicago.
Christian Century
289 Fourth Ave., New York City.
Christian Herald
419 Fourth Ave., New York City.
Christian Leader (Universalist)
16 Beacon Street, Boston.
Churchman, The (P.E.)
425 Fourth Ave., New York City.
Church Management
1900 Euclid Ave., Cleveland, O.
Commonweal, The (R.C.)
386 Fourth Ave., New York City.
Contemporary Jewish Record
386 Fourth Ave., New York City.
International Journal of Religious Education
203 N. Wabash Ave., Chicago.
Living Church (P.E.)
744 North Fourth Street, Milwaukee, Wis.
Presbyterian Tribune
Cadman Memorial Center, Fulton & Clark Streets, Brooklyn.
Reconstructionist, The
15 West 86th Street, New York City.
Religious Digest
234 Pearl St., N.W., Grand Rapids, Mich.
Watchman-Examiner, The (Baptist)
23 East 26th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

NATIONAL CHURCHES

AMERICAN BAPTIST HISTORICAL SOCIETY, Chester, Pa.

AMERICAN UNITARIAN ASSN., 25 Beacon St., Boston, Mass.

BOARD OF DIRECTION OF THE GENERAL SYNOD OF THE REFORMED CHURCH IN AMERICA, 156 Fifth Ave., New York City.

CHRISTIAN SCIENCE CHURCH READING ROOM, 537 Fifth Ave., New York City.

CONGREGATIONAL CHRISTIAN GENERAL COUNCIL, 287 Fourth Ave., New York City.

EVANGELICAL UNITED BRETHREN, 1444 United Brethren Building, Dayton, Ohio.

FREETHINKERS' OF AMERICA, INC., 370 W. 35th St., New York City.

FRIENDS' GENERAL CONFERENCE OF THE RELIGIOUS SOCIETY OF FRIENDS, 1515 Cherry St., Philadelphia, Pa.

GENERAL CONFERENCE OF SEVENTH-DAY ADVENTISTS, 6840 Eastern Ave., N.W., Takoma Park, Washington, D. C.

GENERAL COUNCIL OF THE PRESBYTERIAN CHURCH IN THE U. S. A., 156 Fifth Ave., New York City.

GREEK ORTHODOX CHURCH, 124 Wadsworth Ave., New York City.

NATIONAL LUTHERAN COUNCIL IN AMERICA, 231 Madison Ave., New York City.

NATIONAL SPIRITUALIST ASSN., 600 Penn. Ave., S.E., Washington, D. C.

NORTHERN BAPTIST CONVENTION, 152 Madison Ave., New York City.

PROTESTANT EPISCOPAL NATIONAL COUNCIL, 281 Fourth Ave., New York City.

SOCIETY FOR ETHICAL CULTURE OF NEW YORK, 2 W. 64th St., New York City.

THEOSOPHICAL SOCIETY IN AMERICA, Covina, Calif.

UNION OF AMERICAN HEBREW CONGREGATIONS, 32 W. 6th St., Cincinnati, Ohio.

UNION OF ORTHODOX JEWISH CONGREGATIONS OF AMERICA, 305 Broadway, New York City.

UNITED LUTHERAN CHURCH IN AMERICA, 231 Madison Ave., New York City.

UNITED SYNAGOGUE OF AMERICA, Broadway and 122nd St., New York City.

UNIVERSALIST GENERAL CONVENTION, INC., 16 Beacon St., Boston, Mass.

VEDANTA SOCIETY, 34 W. 71st St., New York City.

VOLUNTEERS OF AMERICA, 34 W. 28th St., New York City.

INTERNATIONAL ORGANIZATIONS

ASSOCIATION FOR THE PROMOTION OF CHRISTIAN UNITY, Mission Bldg., Indianapolis, Ind.

BAPTIST WORLD ALLIANCE, Bates College, Lewiston, Me.

CENTRAL BUREAU OF EVANGELICAL CHURCHES IN EUROPE, 297 Fourth Ave., New York City.

COMMITTEE ON FRIENDLY RELATIONS AMONG FOREIGN STUDENTS, 347 Madison Ave., New York City.

ECUMENICAL METHODIST CONFERENCE, 720 Omaha Bank Bldg., Omaha, Neb.

INTERNATIONAL ASSOCIATION FOR THE PROMOTION OF LIBERAL CHRISTIANITY AND RELIGIOUS FREEDOM, 25 Beacon St., Boston, Mass.

INTERNATIONAL CONGREGATIONAL COUNCIL, 287 Fourth Ave., New York City.

INTERNATIONAL COUNCIL OF RELIGIOUS EDUCATION, 203 N. Wabash Ave., Chicago, Ill.

LUTHERAN WORLD CONVENTION, 231 Madison Ave., New York City.

NEAR EAST COLLEGE ASSOCIATION, INC., 50 West 50th St., New York City.

RELIGIOUS EDUCATIONAL ASSOCIATION, 59 E. Van Buren St., Chicago, Ill.

UNIVERSAL CHRISTIAN COUNCIL ON

Life and Work, 297 Fourth Ave., New York City.

Western Section of Alliance of Reformed Churches Throughout the World Holding the Presbyterian System, 226 W. Mowry St., Chester, Pa.

World Conference for International Peace Through Religion, 70 Fifth Ave., New York City.

World Student Christian Federation, 347 Madison Ave., New York City.

World's Christian Endeavor Union, 1203 East Broad Street, Columbus, Ohio.

World's Sunday School Assn., 156 Fifth Ave., New York City.

INTERCHURCH ORGANIZATIONS

American Bible Society, 450 Park Ave., New York City.

American Sunday School Union, 1816 Chestnut St., Philadelphia, Pa.

American Tract Society, 21 W. 46th St., New York City.

Chaplain's Aid Assn., 10 E. 52nd St., New York City.

Church Peace Union, 70 Fifth Ave., New York City.

Community Church Workers of U. S. A., 77 W. Washington St., Chicago, Ill.

Conference of Theological Seminaries and Colleges in the U. S. A. and Canada, Gettysburg, Pa.

Epworth League of the Methodist Episcopal Church, 740 Rush St., Chicago, Ill.

Federal Council of the Churches of Christ in America, 297 Fourth Ave., New York City.

Fellowship of Christian Co-operation, 2929 Broadway, New York City.

Free Church of America, 25 Beacon St., Boston, Mass.

National Council of Protestant Episcopal Churches, 281 Fourth Ave., New York City.

National Religion and Labor Foundation, 106 Carmel St., New Haven, Conn.

Synagogue Council of America, 607 W. 161 Street, New York City.

United Christian Council for Democracy, 457 W. 123rd Street, New York City.

AUXILIARY ORGANIZATIONS

Catholic Church Extension Society of the U. S. A., 360 N. Michigan Ave., Chicago.

Catholic Guardian Society, 1 Park Ave., New York City.

Church League for Industrial Democracy, 135 Liberty St., New York City.

Community Church Workers of the U. S. A., The, 1302 Chicago Temple, 77 W. Washington St., Chicago, Ill.

Laymen's Movement for a Christian World, 347 Madison Ave., New York City.

Lord's Day Alliance of the U. S., 156 Fifth Ave., New York City.

National Conference of Christians and Jews, 381 Fourth Ave., New York City.

Woman's Christian Temperance Union, 1730 Chicago Ave., Evanston, Ill.

Woman's National Sabbath Alliance, 156 Fifth Ave., New York City.

Young Men's Christian Assn., 420 Lexington Ave., New York City.

Young Men's Hebrew Assn., Lexington Ave., and 92nd Street, New York City.

Young Women's Christian Assn., 600 Lexington Ave., New York City.

Young Women's Hebrew Assn., Lexington Ave., and 92nd Street, New York City.

RELIGIOUS PUBLICATIONS

American Baptist Historical Society, Upland Ave., Chester, Pa.

American Baptist Publication Society, 1701 Chestnut St., Philadelphia, Pa.

American Bible Society, 450 Park Ave., New York City.

American Tract Society, 21 W. 46th St., New York City.

Chicago Tract Society, 343 S. Dearborn St., Chicago, Ill.

Gideons, 202 S. State St., Chicago, Ill.

NATIONAL TESTAMENT AND TRACT LEAGUE, 200 Kellog Bldg., Washington, D. C.

POCKET TESTAMENT LEAGUE, THE, 156 Fifth Ave., New York City.

RELIGIOUS EDUCATIONAL ASSN., 59 E. Van Buren St., Chicago, Ill.

SOCIETY FOR THE PROPAGATION OF THE FAITH, 462 Madison Ave., New York City.

MISSIONARY

AGRICULTURAL MISSIONS INC., 156 Fifth Ave., New York City.

AMERICAN BOARD OF COMMISSIONERS FOR FOREIGN MISSIONS, 14 Beacon St., Boston, Mass.

AMERICAN McCALL ASSN., 130 E. 22 St., New York City.

AMERICAN MISSION TO LEPERS, INC., 156 Fifth Ave., New York City.

CHRISTIAN AND MISSIONARY ALLIANCE, 260 W. 44th St., New York City.

COMMITTEE OF REFERENCE AND COUNSEL, 156 Fifth Ave., New York City.

COUNCIL OF WOMEN FOR HOME MISSIONS, 297 Fourth Ave., New York City.

HOME MISSIONS COUNCIL OF NORTH AMERICA, 297 Fourth Ave., New York City.

INTERNATIONAL MISSIONARY COUNCIL, 156 Fifth Ave., New York City.

MISSIONARY EDUCATION MOVEMENT OF THE UNITED STATES AND CANADA, 156 Fifth Ave., New York City.

NATIONAL COUNCIL OF JEWISH WOMEN, 1819 Broadway, New York City.

NEAR EAST FOUNDATION, 17 W. 46th St., New York City.

STUDENT VOLUNTEER MOVEMENT FOR FOREIGN MISSIONS, INC., 156 Fifth Ave., New York City.

WOMAN'S UNION MISSIONARY SOCIETY, 45 Astor Place, New York City.

PART SIX

SCIENCE—APPLICATION AND PRINCIPLES

DIVISION XVIII

MATHEMATICS AND ASTRONOMY

MATHEMATICS

By G. T. Whyburn
Professor, University of Virginia

GENERAL

The return of mathematicians to research and teaching from war work, which was almost complete by the beginning of 1946, resulted in greatly increased activity both in papers read at meetings and in published work. In addition to meetings of the American Mathematical Society, Mathematical Association of America, and their associated sections and organizations, research in mathematics received further stimulus from special conferences held during the year, such as the Conference on Algebra at the University of Chicago and the Princeton Bicentennial Conference on The Problems of Mathematics.

The G. D. Birkhoff memorial number of the *Transactions of the American Mathematical Society* appeared during the year, carrying an appropriate dedication by R. E. Langer together with a life-like photograph which will be cherished by Birkhoff's many friends and admirers in mathematical and scientific circles everywhere. In addition an excellent extended account of Birkhoff's life and work written by Marston Morse was published in the *Bulletin of the American Mathematical Society* in 1946.

The year 1946 was further marked by the reappearance of some of the foreign mathematical publications which had suffered suspension during the war. A notable example in this respect was *Fundamenta Mathematicae,* a highly esteemed Polish mathematical journal, which reappeared after a lapse of six years.

In what follows some of the significant developments in mathematical research will be referred to or briefly sketched.

ANALYSIS

According to a classical result of Lebesgue, the ratio of the numerical value of the difference between a continuous function f(x) of period 2π and the n-th partial sum of its Fourier's series to $n^{-\alpha} \log n$ is bounded uniformly in x provided f(x) satisfies a Lipschitz condition of order α $(o < \alpha < 1)$, that is, provided the ratio of $|f(x + h) - f(x)|$ to $|h|^{\alpha}$ is bounded uniformly in x as h approaches zero. It is known that in general the factor log n can not be omitted from this result. However, it was shown by R. Salem and A. Zygmund that the result remains valid with this omission for functions of so-called monotonic type, *i.e.,* functions f(x) for which a constant C exists such that f(x) + C is either never decreasing or never increasing in $(-\infty, \infty)$.

The latter condition can not be replaced by the requirement that the function be of bounded variation.

It was shown by Porter in 1904 that a suitably chosen sequence of partial sums in a Taylor development may converge in a region containing both points inside and points outside the circle of convergence. Porter also noted that this phenomenon was closely related to the accumulation of the zeros of the partial sums on the circle of convergence. In a paper published in the *Duke Mathematical Journal* in 1946, J. L. Walsh undertakes an analogous investigation for sequences of arbitrary analytic functions. The results obtained not only include all known theorems of this type on Taylor's series but also have immediate application to maximal convergence of sequences of rational functions, convergence of analytic functions of prescribed norm of best approximation, convergence of functions of given measure of approximation and minimum norm, and convergence of interpolating functions of minimum norm.

FUNCTIONS

In a series of papers, several of which appeared in 1946, M. Morse and M. H. Heins contributed significantly to the development of topological methods in the theory of functions of a complex variable. Locally simple plane curves are defined and analyzed from the standpoint of their deformation types and classes in a plane. They consider a single valued function $f(z)$ meromorphic in a bounded region R and continuous on the boundary B of R where B consists of k disjoint simple closed curves. Among other things it is shown that if $n(O)$ and $n(\infty)$ are the numbers of zeros and poles of f in R and m is the number of ramification points of the inverse of $f(z)$ on the Riemann image of R, each counted with multiplicity, then under suitable boundary conditions stated in terms of local simplicity of the mapping at boundary points,
$n(O) + n(\infty) - m = 2 - k + q - p$,
where q is the order of the image B' of B relative to the origin and p is the angular order of B'. A similar result is established for interior transformations instead of meromorphic functions.

It has been conjectured by Bieberbach that in the power series expansion $f(z) = z + a_2z^2 + \ldots$ of a function which is regular and smooth (schlicht) inside the unit circle, $|a_n| \leq n$. This has been verified for $n \leq 3$. It was shown by B. Friedman in 1946 that $|a_4| \leq 4.16$. Friedman also showed that in case the coefficients $a_2, a_3, \ldots$ are integers, $f(z)$ is necessarily one of the nine functions z, $z/(1 \pm z)$, $z/(1 \pm z^2)$, $z/(1 \pm z)^2$, $z/(1 \pm z)/(1 \pm z^3)$. In the same connection A. C. Schaeffer and D. C. Spencer (not assuming the a_i to be integers) succeeded in determining the region of variability of the coefficients, that is, the set V_n in Euclidean $2n - 2$ space of points $(a_2, a_3, \ldots, a_n)$ such that $a_2, a_3, \ldots, a_n$ can appear in this order as coefficients in the expansion of a function $f(z)$ satisfying the above form and conditions.

CALCULUS OF VARIATIONS

In a series of papers published in the *Transactions of the American Mathematical Society* and devoted to a study of the general isoperimetric problem of Bolza so formulated as to include most of the interesting problems in the calculus of variations involving simple integrals, M. R. Hestenes developed new properties of the Weierstrass E-function and applied these and the accompanying notions and methods to establish a new sufficiency theorem for a strong relative minimum. This theorem had been conjectured by McShane who had proven the analogous weak relative minimum theorem. Also in 1946 W. T. Reid succeeded in weakening the hypotheses and simplifying the proof the McShane-Tonelli result to the effect that every absolutely continuous solution of the problem of minimizing the integral of $f(x,y,y')dx$ on the range (x_1,x_2) satisfies du-Bois Reymond's form of the Euler equations.

DIFFERENTIAL EQUATIONS

With two notable exceptions the standard general existence theorems for the problem of initial values concerned with systems of ordinary differential equations are local in nature. One of these exceptional cases is represented by those systems whose solutions depend on inversions of quadratures. In a note published in the *American Journal of Mathematics,* A. Wintner singled out a class of differential equations and showed that for this class the above mentioned exceptional case serves as a prototype in the sense that all solutions share a significant property as exhibited in the following theorem: Let $f(t,x)$ be real and continuous on the strip $0 \leq t \leq a, -\infty < x < \infty$ and let $x = x(t), 0 \leq t < t_0$, with t_0 finite and $\leq a$, be a solution of the differential equation $x' = f(t,x)$; then $x(t - 0$ exists, finite or infinite; and if this limit is finite, $x(t)$ can be extended to the closed interval $0 \leq t \leq t_0$ so as to be continuous and differentiable and to satisfy the differential equation.

DIFFERENTIAL GEOMETRY

In a study of the fiber bundles of the complex tangent vectors and their characteristic classes, S. Chern exhibited certain basic classes from which all other characteristic classes can be obtained by operations of the cohomology ring. These cohomology classes can be expressed by exact exterior differential forms which are regular on the real manifold; and it is shown that in case the manifold carries an Hermitian metric, these differential forms can be constructed from the metric in a simple way. Thus the characteristic classes are completely determined by the local structure of the Hermitian metric.

Investigating geodesics on surfaces of revolution, D. P. Ling succeeded in analyzing the number and distribution of the double points of geodesics on such surfaces. The type of surface S considered is generated by revolving about Oy a curve which rises monotonically from the origin to infinity as x increases. In general, each geodesic on S has a nearest point P to the vertex of S and spirals symmetrically in either direction from P, intersecting itself infinitely many times. Ling showed that S may be divided into zones by a sequence of parallels on S so that the double points of the geodesics on S are distributed regularly relative to these zones.

S. Bochner showed that on a compact space with positive definite Riemann metric with Ricci curvature everywhere positive there exists no vector field for which the divergence and curl both vanish. He also proved a related non-existence theorem for negative Ricci curvature.

METRIC GEOMETRY

Metric characterizations of Euclidean and Hilbert spaces among the class [S] of all semi metric spaces were given earlier by K. Menger and W. A. Wilson; that is, necessary and sufficient conditions strictly in terms of the metric were given in order that a member of [S] be isometric with a space of the sort being characterized. Similar characterizations of hyperbolic and spherical spaces have been given by L. M. Blumenthal. In 1946 Blumenthal rounded out this chain of results concerning Euclidean and non-Euclidean spaces by giving metric characterizations for elliptic spaces of finite and infinite dimensions.

G. S. Young characterized spaces congruent with bounded subsets of a line in terms of minimality properties of the linear metric. This may be contrasted with the Menger-Blumenthal characterizations which are given in terms of imbeddability of finite subsets.

PROJECTIVE GEOMETRY

In an article published in the *Bulletin of the American Mathematical Society,* R. Baer developed the thesis that the structure of a projectivity is dominated by the structure of its fixed elements provided this system is not "too small" by investigating those projectivities, called quasi-perspectivities, characterized by the property that every line carries a fixed point. In particular it was shown that this latter property is equivalent also to each of the following properties for a given projectivity f: (1) for each point P, P and its images under both f and f^2 are collinear, (2) for each line h, h and its images under both f and f^2 are copunctual, and (3) every point lies on a fixed line.

FOUNDATIONS OF GEOMETRY

Referring to descriptive geometry as "essentially the linear geometry of a convex region" and seeking to characterize the general concepts of the subject by properties lending themselves to algebraic development, W. Prenowitz presented an axiomatization of descriptive geometries in terms of join and extension by assumptions closely analogous to algebraic and group theoretic axioms. This leads to a form of generalized group with a many valued composition and is termed a multigroup.

ALGEBRA AND THEORY OF EQUATIONS

A linear subspace A of the space M of all linear transformations over a field F on a linear n-dimensional space is weakly closed relative to transformation multiplication (*i.e.*, the product operation ab in M) if there are elements x and y in F not both zero such that $x\,ab + y\,ba$ is in A for every a and b of A. Such subspaces A are known to be of three basic types, two of which have been subjected to extensive structure analysis. The third type, that in which the characteristic of F is not two and A is closed relative to the non associative product $a.b = (ab + ba)/2$ is the subject of a far reaching study by A. A. Albert published in the *Transactions of the American Mathematical Society* in 1946. In this case the spaces A form commutative non associative algebras with respect to the operation a.b and they are called *Jordan algebras* by Albert. Fundamental structure theorems for such algebras over a non-modular field are established.

Evelyn Frank gave an algorithm for determining the number of zeros of a polynomial with complex coefficients and extended the method used in this so as to make it yield actual computation of the zeros by successive approximations. The computation involves only the iterated processes of synthetic division and cross multiplication and eliminates entirely the necessity of computing with complex numbers. Thus it is adaptable to routine calculation with ordinary machines.

NUMBER THEORY

P. Erdös and I. Niven proved that no two partial sums in the harmonic series can be equal and also that for only a finite number of integers n can one or more of the elementary symmetric functions of 1, 1/2, . . . , 1/n be an integer. This connects up with the known result that the sum of the reciprocals of the integers lying between two given integers m and n is never an integer for any m and n.

Erdös proved the conjecture of Aulack, Chowla, and Gupta to the effect that if $p_k(n)$ denotes the number of partitions of n into exactly k summands and $p_{k_0}(n)$ denotes the maximum $p_k(n)$ for n fixed, then k_0 is asymptotically equal to $c^{-1}n^{\frac{1}{2}} \log n$ where $c = \pi(2/3)^{\frac{1}{2}}$. Also on the subject of partitions, D. H. Lehmer showed that the number of partitions of n into parts differing by d or more is not equal to the number of partitions of n into parts taken from any set S of integers whatever, except when d = 0, 1, or 2, and also not equal to the number of partitions of n into distinct parts taken from any set S of integers whatever except when d = 1.

Gordon Pall and Arnold Ross made essential contributions in connection with the problem of representing all positive integers in the form of a sum of four squares with fixed integer coefficients. In particular Pall completed the solution to the problem of Kloosterman, originally formulated by Ramanujan, of determining all sets of coefficients for which a form of this type will represent all positive integers.

GROUP THEORY AND LATTICE THEORY

A comprehensive study of the structure and ideal theory of complete local rings was published in the *Transactions of the American Mathematical Society* by I. S. Cohen. R. Baer proved that the only group which can be a retract of every containing group is the identity; hence only modifications of the topological concept of a retract will be useful in group theory. Baer suggests and proves theorems supporting the following groups as retracts: (1) the complete groups, (2) abelian groups the orders of whose elements are finite, and (3) the free groups.

It was proven by P. M. Whitman that any lattice is isomorphic to a sublattice of the lattice of all equivalence relations on some set. This means essentially that any lattice is a lattice of equivalence relations. In view of G. Birkhoff's result that any lattice of equivalence relations is isomorphic to a lattice of subgroups, this gives that any lattice is isomorphic to a sublattice of the lattice of all subgroups of a suitable group.

TOPOLOGY

The first topological characterization of a plane was given by R. L. Moore in 1916. This was followed shortly by a similar characterization of the sphere by R. L. Moore and J. R. Kline. In the intervening years these notable results have been the subject of much study and considerable simplification and extension by numerous mathematicians, including R. L. Wilder, L. Zippin and E. R. van Kampen, among others. The characterization of the sphere had been perfected into the following form: A locally connected continuum is a topological sphere if and only if it contains at least one simple closed curve, is separated by every such curve it contains, but is not separated by any proper arc of any such curve it contains. It had been conjectured by Kline that the last named condition could be replaced by the simpler condition that the continuum be not separated by any pair of its points. After remaining unproven for a number of years, the correctness of this conjecture was established by R. H. Bing in 1946. Thus the topological 2-sphere can be characterized in terms of topological spheres of lower dimensions. For, since the topological 0-sphere is a pair of points and the topological 1-sphere is a simple closed curve, it is now possible to assert that a non-degenerate locally connected continuum is a topological 2-sphere if and only if it is separated by every topological 1-sphere but by no topological 0-sphere that it contains. This parallels the long known characterization of the topological 1-sphere (simple closed curve) as a non-degenerate continuum separated by every topological 0-sphere (point pair) it contains.

The 1946 summer meeting of the American Mathematical Society was highlighted by the well organized and comprehensive Colloquium Lectures on "The Topology of Smooth Manifolds" by Hassler Whitney. Whitney brought out many interesting new developments connecting up topological methods with the concepts and results of several other fields of mathematics, notably those in which differentiability plays an essential role.

A. D. Wallace obtained a generalization along homotopy lines of the structure theory of locally connected continua. Analogs of cyclic elements and of A-sets, called *extension sets,* were set up in terms of homotopy relations and many structure theorems similar to known results for cyclic elements and A-sets were established. Thus this basic subject assumes a form strictly appropriate for inclusion in *analytic topology.*

S. Eilenberg and D. Montgomery proved an important and comprehensive fixed point theorem for multivalent transformations. This embraces not only the Lefschetz theorem for single valued mappings but also the Wallace and Kakutani results for multiple valued transformations applied to dendrites and dendritic spaces. F. B. Jones proved that any locally connected complete metric space not cut by any pair of its points and containing no skew curve of type 1 in the Kuratowski sense is separable.

An excellent review of the classical and most fundamental triangulation problem for manifolds was given by S. S. Cairns. This problem has been solved in its full generality only for two dimensional manifolds. F. A. Valentine presented an interesting study of set properties determined by conditions on their linear sections.

Existence and properties of extensions of homeomorphisms of the interior I of a 2-cell with boundary C onto a plane region R were established by E. E. Floyd. Floyd showed that if the homeomorphism is uniformly continuous, its extension is non-alternating when reduced to a mapping from C to the boundary of R. This and related results are applied to obtain certain results concerning conformal maps, notably the Osgood-Carathéodory Theorem.

G. S. Young gave a method of introducing local connectedness into certain non-locally connected sets by an appropriate change of topology. With the use of this method one is able to prove numerous theorems in the more advantageous setting provided by the presence of local connectedness.

TOPOLOGICAL DYNAMICS

W. H. Gottschalk and G. A. Hedlund considered flows in which the parameter space of reals in the usual continuous flow is replaced by an additive abelian locally compact topological group. The action of such a transformation group T on a point and the action of certain subgroups G of T were shown to be related in that a general recursive property of T carries over to G. This result has as a corollary that in the case of a continuous flow, if a point is either almost periodic, recurrent, or strongly recurrent relative to the continuous flow, it retains this property relative to the discrete flow generated by fixing the parameter t and iterating the transformation thus singled out.

Also Gottschalk studied pointwise non-wandering mappings, that is, mappings f(X) such that for any neighborhood U of a point x there are infinitely many integers n such that U intersects $f^n(U)$. Similar results as for recurrent transformations were shown to hold, for example: (1) if f has this property, so also has f^k for any positive integer k, (2) if X is connected and f has this property, every cut point of X is periodic, and (3) if X is a semi-locally-connected continuum and f has this property, all cyclic elements other than end points are periodic.

It was shown by S. B. Myers that a close connection exists between the equicontinuity of a set of mappings and the compactness of the closure of the set in the natural topology of the mapping space, even when compactness conditions on the spaces acted on by the mappings are considerably lightened. Applications of the results obtained were made to yield certain conclusions concerned with transformation groups and with recurrence of homeomorphisms.

ASTRONOMY

By Rupert Wildt
Assistant Professor, Yale University

ASTRONOMERS AND OBSERVATORIES

The 74th meeting of the American Astronomical Society was held at Columbia University Feb. 1-2, 1946; originally it had been scheduled for February 1945 but was cancelled because of wartime restrictions on travel and meetings. The 75th meeting took place Sept. 8-11 at the University of Wisconsin. Dr. Otto Struve, director of the Yerkes and McDonald Observatories, was elected President of the Society. The 76th meeting, held at Harvard University Dec. 26-30, was a particularly large one, and the program comprised a number of symposia. These dealt with "Interstellar Matter," "Electronic and Computational Devices of Interest to Astronomers," "Eclipsing Binaries," and "The Gaseous Envelope of the Earth." Another notable feature of this meeting was the address by Prof H. N. Russell on "The Royal Road of Eclipses," the first annual Henry Norris Russell Lecture established by his friends and colleagues to honor the dean of American astronomers.

Dr. E. T. R. Williams (Mrs. A. N. Vyssotsky) of the Leander McCormick Observatory, received the Annie J. Cannon Prize of the American Astronomical Society. The Henry Draper Medal of the National Academy of Sciences and the Catherine Wolfe Bruce Gold Medal of the Astronomical Society of the Pacific were awarded to Dr. Paul W. Merrill of the Mt. Wilson Observatory. The Potts Medal of the Franklin Institute went to Dr. Ira S. Bowen, director of the Mt. Wilson Observatory. Dr. Leo Goldberg entered upon the directorship of the three observatories of the University of Michigan.

In 1940 Harvard College Observatory established a station for solar observations at Climax, Colorado, which during the past year has been operated jointly by Harvard and the University of Colorado. Its name has now been changed to High Altitude Observatory of Harvard University and the University of Colorado. New buildings and equipment are planned for a site on national forest land about five miles from the present station. The legislature of California allotted $30,000,000 to the University of California. Included in this allotment is the sum of $1,200.000 for the construction of a large reflecting telescope for the Lick Observatory. Work on the design of this instrument is proceeding on the basis of an aperture of 120 inches and focal length of 50 feet (F/5). The mounting will probably be of the long fork type. The location selected is on the main ridge of Mt. Hamilton.

ASTRONOMY AFTER THE WAR

Early in 1946 most astronomers had returned from defense research to their normal pursuits. Consequently, the scientific output of the observatories has begun to rise again. In many ways, astronomers have profited from their experiences during war work. Some of them have mastered new experimental techniques. Special equipment developed by the Armed Forces became a useful tool for astronomical research. In fact, the most startling astronomical news of 1946 was the results of the application of such novel tools. Even such time-honored branch of practical astronomy as the art of navigation felt the impact of the war. Improvement of the methods of aerial navigation remains an urgent problem, as the speed of travel through air continues to increase. A clearing house for information and ideas on navigation has been established in the form of The Institute of Navigation (1911 Eye Street, N. W., Washington, D. C.). This organization is already international in its membership and is devoted to the promotion of safety by sea and air. The Institute will publish its proceedings in a new journal, bearing the title *Navigation*.

The development of servo-mechanisms and high-speed calculating machines, under the pressure of war needs, now begins to influence the art of measuring photographic plates and computing final data from the crude measurements. Among the most time-consuming tasks of observational astronomy is the routine determination of the position and brightness of large numbers of stars, as recorded on photographic plates. Serious efforts are now being made to render these procedures of measurement and computation completely automatic by the use of specially designed machines. It may confidently be expected that within a few years the practice of "catalogue making" in stellar astronomy will have been revolutionized by these methods.

RADAR AND THE MOON

On Jan. 25, 1946, the Signal Corps of the U. S. Army announced that pulses of electromagnetic short-wave radiation, projected toward the Moon by a directive antenna, had been returned as faint echoes within a time interval of about 2.5 seconds; that is the exact time required for two-way transmission over the distance Moon-Earth. The conclusion, that the signals received were really echoes from the Moon, is supported by computations of the strength of the expected echoes, which was well above the sensitivity of the receiving set. Priority in success, however, was claimed by scientists at the University of Sidney, Australia, who state that, in the fall of 1941, they did contact the Moon several times, but publication had to be withheld on account of wartime restrictions.

Impressive though this accomplishment is, of greater scientific import are the investigations of the short-wave electromagnetic radiation emanating from the Sun; these were carried out by numerous scientists in this country and throughout the British Empire during the war, but the results were released only recently. The energy output of the Sun in the range of wave lengths between 1 and 10 meters is about 1000 times that of a "perfect" radiator of 6000°K, *i.e.*, the surface of the Sun as deduced from its total emission of light and heat. The angular resolving power of the new detecting devices does not yet suffice to ascertain whether the electromagnetic radiation originates from localized areas in the Sun's atmosphere or emanates from all over the surface. It has been suggested that the seat of the powerful electromagnetic radiation is in the solar corona.

INFRARED DETECTING DEVICES

The investigation of the infrared part of stellar spectra has long been handicapped by the poor sensitivity of photographic plates in this spectral range. Even with the best sensitizing dyes it is difficult to reach wave lengths greater than about 10 000 A. Beyond this point only thermopiles and bolometers could penetrate, but their sensitivity is also too small to permit the study of any celestial objects but the brightest. During the war, J. R. Cashman, at Northwestern University, developed a new photoelectric cell which utilizes the sensitivity of lead sulphide to infrared radiation. Preliminary experiments with this type of cell, made by G. P. Kuiper at the McDonald Observatory during 1946, raised high hopes. Kuiper has succeeded in recording the infrared spectra of several bright stars and planets all the way to 25 000 A, and many new absorption features in the infrared were discovered. Their detailed study is still under way.

The limiting magnitude of faint stars accessible to this device depends, of course, both on the size of the telescope which concentrates the stellar radiation upon the cell, and on the temperature of the star under investigation. Maximum response of the cell is to the coolest stars, which emit most of their radiation in the infrared; conversely, hot stars make rather poor objects, because their energy maximum is in the ultraviolet. As an example the variable star R Leonis (surface temperature about 3000°K) may be mentioned. This star of 10th visual magnitude was observed by Kuiper with the 80-inch reflector, and its infrared radiation was found to be more than 1000 times as powerful as that of Regulus (surface temperature about 10 000°K), which is of the first magnitude visually.

Another promising device is the so-called superconductivity bolometer, developed under a war contract by D. H. Andrews and his collaborators at the Johns Hopkins University. Astrophysical applications of this instrument have long been contemplated and are now expected with the greatest interest.

SOLAR OBSERVATIONS FROM ROCKETS

Another spectacular application of war-born devices to scientific research is the use of rockets to carry various instruments into the stratosphere. The readings of these instruments, in some cases, are radioed back to the base; in other cases the instruments, after the rocket has reached the peak of its trajectory, are detached and guided back to the ground by parachute. Of greatest astrophysical interest are the photographic records of the ultraviolet solar spectrum obtained by the second method with a specially designed spectrograph (R. Tousey and collaborators at the Naval Research Laboratory). The spectrum recorded at an altitude of 50 miles, the maximum reached so far, extends down to a wavelength of 2200 A, while at the Earth's surface the spectra of celestial objects are cut off at about 2950 A by the powerful absorption of the ozone layer. The terrestrial ozone is spread widely throughout the lower stratosphere, but at an altitude of 50 miles the spectrograph had in effect passed the ozone screen.

If it should prove possible to carry a spectrograph as high as 100 miles, even more of the ultraviolet solar spectrum would become accessible, because then an appreciable fraction of the absorption (below 2000 A) caused by the oxygen and nitrogen molecules would have been eliminated. The few results obtained so far are of merely qualitative nature, that is to say, the photographs show the existence of the ultraviolet solar radiation below 2900 A. The ultimate aim of these researches is, of course, to measure quantitatively the strength of the ultraviolet spectrum, or to determine its energy curve. A knowledge of the ultraviolet energy curve of the Sun would be of great practical value because of its bearing on the processes in the terrestrial ionosphere and its indirect influence on communication by radio. Moreover, since the Sun represents a type of star rather common in the universe, any new information about the Sun would likewise shed light upon the properties of an important class of stars. It would seem conceivable that some day it will become possible to study even the faint light of stars with instruments carried aloft by rockets, but probably many years will pass before this dream of astronomers comes true.

LUNAR OCCULTATIONS OF STARS

One of the most difficult problems of observational astronomy is the direct measurement of the angular diameter of stars, the largest of which do not exceed one tenth of a second of arc. In the hands of F. G. Pease, at the Mt. Wilson Observatory, the Michelson interferometer revealed measurable diameters of only half a dozen giant stars, more than 20 years ago. In 1938, J. D. Williams analyzed theoretically another method of discerning the true diameter of stars. If on its course through the sky the Moon's dark limb passes over a star, it will not disappear instantaneously because of the diffraction of light by the interceding limb. Rather a certain diffraction pattern will sweep over the observer's eye, and the intensity distribution in this pattern is a function of the angular diameter of the occulted star, and to some extent also of the distribution of surface brightness over the star's disc. Although the response of the human eye is not rapid enough to perceive the intensity fluctuations caused by the passage of the pattern, a high-speed recording device might be so, as Williams suggested.

A first attempt to obtain such a record of the diffraction was made in 1938 by A. E. Whitford, at the Mt. Wilson Observatory, and was repeated in 1946 with improved apparatus. The 1946 occultations of four stars were observed with the 100-inch telescope, and the diffraction pattern was recorded by means of a multiplier phototube, cathode ray oscillograph, and moving film camera. The diffraction maxima and minima of the two stars Nu and Kappa Virginis (predicted angular diameter 0″008 and 0″.005, respectively) were less pronounced than those for a point source. Preliminary calculations, based on resolving the stars into equivalent doubles, show agreement with theory within the limits of observational error. For two smaller stars no significant departure from point-source pattern was expected, and none was observed. It seems possible now to determine the angular diameters of stars within 10 per cent, in the range from 0″.005 to 0″.015. The Moon, in all positions of its orbit, occults about a dozen stars, whose angular diameters, calculated from their magnitudes and spectral types, are larger than 0″.005. For these stars there appears to be a definite hope of obtaining an experimental measure of the diameter by observing the diffraction pattern at the time of occultation.

THEORY OF CONTINUOUS STELLAR SPECTRA

At Yerkes Observatory, S. Chandrasekhar has brought to conclusion a long series of investigations on the continuous spectrum of the Sun and the stars, which constitutes a milestone in the development of theoretical astrophysics. The task he had set himself is the prediction of the intensity distribution in the continuous spectrum, for any total flux of radiant energy (measured in ergs per square centimeter per second) traversing a stellar atmosphere of known chemical composition. The solution comprises, in fact, two separate problems. The first one is the evaluation, from the theory radiative equilibrium, of the variation with depth of the local temperature. The monochromatic radiation emerging at the surface can then be found by summation over the radiation emitted at all levels throughout the atmospheres, taking into account that the radiation originating at any particular level is weakened on its way to the surface by the extinction of continuous radiation in the overlying mass of the atmosphere. The computation of the extinction factor requires a knowledge of the physical processes producing the continuous absorption. Thus the second problem is to derive the appropriate extinction coefficient from a quantum mechanical theory of the absorption process.

The expressions describing the state of radiative equilibrium and the emergent radiative flux have long been known, but only appropriate solutions of the integral equations involved were available. Chandrasekhar has devised a powerful mathematical method capable of producing numerical solutions, accurate to any degree that may be desired, of all the integral equations appearing in the theory of radiative equilibrium. Indeed, it has now become possible to solve many specialized problems, including such refinements as the influence of atomic absorption lines on the continuous spectrum (blanketing effect) and the polarization of the emergent flux when scattering by free electrons outweighs the continuous absorption. It is possible, moreover, to state precisely how the emergent flux varies with the angle of emergence; in other words, the variation of surface brightness of the Sun across the disc (limb darkening) can be predicted rigorously.

The source of the continuous absorption in the atmospheres of the hotter stars has long been recognized as the process of ionization of atomic hydrogen, which is associated with the well-known continuous spectra adjacent to the series limits (Lyman, Balmer, Paschen continuum). In the Sun, and in the cooler stars, this absorption by atomic hydrogen is too weak to account for the observed intensity distribution in the visible range of the spectrum (4000-8000 A).

In 1938, it was first suggested by the reviewer that the continuous absorption in the atmospheres of the Sun and stars of similar type was produced by the ionization of the negative hydrogen ions. These particles, which consist of neutral hydrogen atoms to which a second electron is weakly attached, have been observed in laboratory experiments with the mass spectrograph, but they have never been isolated in amounts large enough to permit studying their absorption spectrum in the laboratory. Hence it became necessary to derive the absorption spectrum from the quantum mechanical theory of the negative hydrogen ions, a task which proved very laborious indeed. Chandrasekhar's investigations culminated in the proof that the observed intensity distribution in the emission spectrum of the Sun can be explained quantitatively by the absorption caused by negative ions of hydrogen, in conjunction with the general theory sketched in the last paragraph. Although the other constituents of the solar atmosphere, particularly atomic hydrogen and metals, also exert continuous absorption, their magnitude is numerically negligible compared with that produced by the negative hydrogen ions. In other words, what Chandrasekhar's researches have accomplished is the identification of the negative hydrogen ion in the solar atmosphere, by means of its continuous absorption spectrum.

G. Münch, a student of Chandrasekhar, has extended his work to the interpretation of the continuous spectra of the stars hotter than the Sun. As the temperature increases, the continuous absorption of atomic hydrogen gradually supersedes that of the negative ions, becoming dominant at surface temperatures of about 10 000°K, *i. e.* in stars of spectral class A. In the hottest stars, of spectral class B, hydrogen is largely ionized; in that case, the scattering of radiation by the free electrons outweighs the continuous absorption of the few remaining hydrogen atoms. Now the escape of radiation through an atmosphere consisting predominantly of free electrons is accompanied, as Chandrasekhar's new mathematical theory predicted, by strong polarization of the radiation emitted at the limb of the stellar disc. Preliminary experiments undertaken at the Yerkes Observatory have led to the discovery of these very polarization effects; the observations were undertaken during a partial eclipse of a B star by a larger dark companion, which shielded the unpolarized light emitted at the center of the B star's disc.

MOTIONS OF GLOBULAR STAR CLUSTERS

The globular star clusters are remote members of our own galactic system, as was demonstrated by Shapley 30 years ago, and are scattered around its outer fringes. On account of their large distances from the Sun, neither internal motions of individual stars have been observed, nor is there much hope of measuring the tangential motions of these objects, with respect to stars in the foreground. However, their motions in the line of sight, discovered by Slipher, can be measured spectroscopically by the line-shifts resulting from Doppler effect. N. U. Mayall has recently reported the results of many years of work with the Corssley reflector of the Lick Observatory, during which the radial velocities of 50 globular clusters altogether were determined; all of them fall within the previously known range from +291 to −360 km/sec. The excess of negative velocities is owing to selection, for the majority of the observed clusters are located in galactic longitudes (145°-325°) where the solar motion component is negative. An important characteristic of the distribution of the observed clusters over the celestial sphere is the apparent lack of velocities between galactic longitudes 40° and 190°, and again between longitudes 230° and 300°. The first of these gaps, in the direction opposite to that of the galactic center, is quite real; there is but a single cluster known throughout a region comprising more than one-third of the sky. The second vacancy is simply owing to the fact that most of the globular clusters in that region can not be observed from the northern hemisphere of the Earth.

Despite this unfavorable distribution of the observed clusters, an attempt has been made to determine the solar motion with respect to the system of globular clusters. According to current ideas the Sun moves in a circular orbit around the galactic center located near longitude 325°. Viewed from the galactic North pole, the motion is clockwise. As a first step in the proposed analysis, the measured radial velocities of the clusters were corrected for a local solar motion of 20 km/sec toward the convential apex; by this procedure, any solar motion deduced from the cluster velocities is referred to a moving coordinate system whose rotational velocity about the galactic center corresponds to the average motion of the near-by stars. After a lengthy discussion of possible systematic errors Mayall arrives at the velocity V = 200 km/sec (toward galactic longitude 55°) as the most probable for the solar motion (or strictly that of the rotating system representing the general neighborhood of the Sun) referred to the globular clusters.

Now, in discussions of galactic rotation the Sun's orbital velocity is commonly held to be of the order of 275-300 km/sec, a figure which Mayall accepts after renewed discussion. He concludes that there is a real difference of 80-100 km/sec between the Sun's motions with respect to the galactic center and to the system of globular clusters. The interpretations of this result appear possible: either (1) a smaller circular velocity (V = 200 km/sec) for the Sun than hitherto accepted, and no significant rotation of the cluster system, which then should show a nearly spherical distribution for lack of dynamical flattening; or (2) an appreciable amount (75-100 km/sec) of systematic rotation for a flattened cluster system and a solar orbital velocity as hitherto assumed (V = 275-300 km/sec). No cogent decision between these alternatives is possible at present, but Mayall inclines to favor the second explanation.

COSMIC EVENTS

There was no total solar eclipse during 1946, but the year was rich in comets. In addition to several well-known periodic comets returning in 1946, five new ones were discovered. They are Comet 1946a (Timmers), discovered in February at the Vatican Observatory; Comet 1946c (Padjusakova-Rotbart), discovered in May independently at the Skalnate Pleso Observatory in the Tatra Mountains of Czechoslovakia and by an amateur astronomer at Washington, D. C.; Comet Jones and Comet Berry discovered in New Zealand, and Comet Bester discovered in South Africa. None of these objects was conspicuous.

The return of the periodic Comet Giacobini-Zinner, in October 1946, had been eagerly expected by astronomers, because during its last close approach to the Earth, in 1934, a spectacular shower of meteors had occurred. On the date of the closest approach, October 9-10, 1946, bad weather prevailing over large parts of the United States prevented most visual observers from spotting any meteors. However, three Army radar stations, alerted at the request of scientists, recorded numerous echoes from the ionosphere, which are believed to have been caused by disturbances created by the passage of meteors through the ionosphere.

A. Deutch, at the Yerkes Observatory, noticed Feb. 9, 1946 that Nova T Coronae Borealis (1866) had suddenly risen to the third magnitude after, for the past 80 years, it had hovered around the tenth magnitude; a distinct brightening of this star had already occurred in 1938. The outburst of 1946 is remarkable for the fact that its light-curve duplicates to a high degree the light-curve of 1866. This star has now become the outstanding representative of the small class of recurrent novae. The similarity of the light-curve of 1866 with that of other recurrent novae had, in fact, led the Russian astronomers, Kukarkin and Parenago, to predict the recurrence of the nova state for T Coronae Borealis.

PERIODICAL PUBLICATIONS

American Journal of Mathematics
Johns Hopkins Press, Baltimore.

American Mathematical Monthly
Illinois Institute of Technology, Chicago, Ill.

Annals of Mathematics
Princeton University Press, Princeton, N. J.

Astronomical Journal
Yale University Observatory, New Haven, Conn.

Astrophysical Journal
5750 Ellis Ave., Chicago.

Bulletin of the American Mathematical Society
531 West 116th Street, New York City.

Duke Mathematical Journal
Duke University Press, Durham, N. C.

Journal of Mathematics and Physics
Massachusetts Institute of Technology, Cambridge, Mass.

Popular Astronomy
Carleton College, Northfield, Minn.

Publications of the Astronomical Society of the Pacific
129 Twenty-fourth Ave., San Francisco, Calif.

School Science and Mathematics
3319 N. 14th St., Milwaukee, Wis.

Sky and Telescope
Harvard College Observatory, Cambridge, Mass.

Transactions of the American Mathematical Society
531 West 116th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ASTRONOMICAL SOCIETY, Dearborn Observatory, Evanston, Ill.

AMERICAN MATHEMATICAL SOCIETY, 531 W. 116th St., New York City.

MATHEMATICAL ASSN. OF AMERICA, Cornell University, Ithaca, New York.

NATIONAL ACADEMY OF SCIENCES, 2101 Constitution Ave., Washington, D. C.

DIVISION XIX

ENGINEERING AND CONSTRUCTION

STRUCTURAL ENGINEERING

By Walter E. Hanson
Assistant Professor, University of Illinois

GENERAL

As the first full post-war year of the atomic age, 1946 was a year of greatly increased building and construction with the largest part of the growth resulting from the expansion of private and public industry. Several factors have influenced the magnitude of the increase in building activity. There has been considerable development of projects dormant during the past four years because of wartime restrictions. The return of millions of service personnel to civilian status has created the difficult problem of supplying millions of homes in the shortest possible time.

The year, with its record of an approximate increase of 150 per cent in total construction over that for 1945, was nevertheless a year of transition. The high bids received on some projects were caused largely by uncertainties both in the availability of materials and the demands of union labor. In some cases projects were not put under contract because of the increased costs, but in general the feeling was that the higher prices on bids remained in line with the current value of the dollar.

Many authorities have predicted an improvement in the delivery of building supplies for 1947. The past year was a sellers' market with a buyers' market expected within the next year. At that time material supply will cease to be the major bottleneck in the present curtailed building program. It is also expected that there will be a reduction in work stoppages by labor disputes as conditions become more stable. The fact that most of the uncertainties and bottlenecks of the transition period have been surmounted gives a sound basis for an optimistic forecast of the future for the construction and building industry.

The planning commissions of many cities have made extensive surveys and recommendations dealing with increased traffic problems, zoning laws, and building expansions. These reports and recommendations have lead to increased municipal construction and development over and beyond that amount which was held in abeyance during the war. Cities, large and small, are finding inadequacies in their water systems and sewage disposal methods. Large cities will soon have many express highways under construction which, together with increased parking facilities, will relieve both the midtown and arterial traffic problems.

New highway projects have contributed considerably to the increase in public construction. Large expenditures of Federal and state-aid funds were resumed after several years of very little new highway construction. The speed with which road-building was implemented and the success of its prosecution was hampered by several factors. There have been shortages of engineering personnel in the state highway departments. Contractors were available to undertake the new work but the short supply of construction materials and the lack of labor resulted in high bids and slow progress after the projects were placed under contract.

During the year there was increasing evidence that the development of water resources would constitute a major portion of the total construction in the future. The construction of dams and related river developments, stopped by the war, was resumed by the Bureau of Reclamation, U. S. Army Engineers, and Tennessee Valley Authority. In addition to the continuation of these old projects, many new designs have been completed and, in many cases, were actually placed under contract during 1946.

Very few large bridges were under construction during 1946. The activity along this line was somewhat limited to the preparation of plans for bridges to be placed under construction in the near future. However, a large number of small bridges and grade separations were completed as part of the development of highways. Many cities have plans under way which call for the construction of bridges and viaducts as part of their activity to contend with increased traffic.

RESEARCH

There was increasing evidence during 1946 that structural engineers were incorporating into their designs the results of the wartime research development. This fact is substantiated by the revision of design specifications, the use of new alloys, and the evidence of unique concrete and wood structures. The results of a large portion of the research completed during the war became available for general use and study through the removal of secretive classifications. The continuance of the large research projects by the Army and Navy, along with the increased research activity of private industry and various organizations, is indicative of an accelerated trend toward expanded scientific research as it affects the structural engineer.

Structural research and investigations have increased proportionately along with the total expanded peacetime research program. During the war most of the research programs were directed by the Government; in view of this fact, any comparison of the amount of research undertaken during the year should be made relative to the pre-war years. Many of the projects under way at the end of the war were continued either by the Government or under supervision of private industry. The amount of research conducted by the Army and Navy combined with that carried on by private industry and various organizations exceeded the magnitude of any previous peacetime year.

Theoretical and experimental research in the field of aircraft structures continued to constitute a large portion of the structural research undertaken or completed during the year. The advancements in other phases of aeronautical science present new problems in design for the structural engineer to solve. Some of the investigations in this field dealt with the behavior of common structural members to determine more exact methods of analysis. The purpose of other research was the development of new techniques of design and construction. Certain developments in the use of new metals and wood, the result of research in aircraft structures, can be used to advantage by engineers in other fields. The National Advisory Committee for Aeronautics, vastly productive during the war, continued to be responsible for much of the research work in this field.

The reports and discussions of the various research projects under way to solve certain dynamic problems encountered in the design of suspension bridges occupied considerable space in engineering publications. Much of the research involved the study of a model of the new Tacoma Narrows Bridge; nevertheless, the results of the investigations will have some irrevocable value to designers of all future suspension structures. Test instruments were installed at various points on the Golden Gate Bridge to record the oscillations of the structure under action of the wind.

A review of research projects of interest to the structural engineer should include the work sponsored by the Public Roads Administration in cooperation with the State Highway Departments. The program included the study of slab and beam construction and the investigation of impact and dynamic stresses in highway bridges. Other miscellaneous projects, financed in various ways, were concerned with fatigue strengths, welded structures, riveted joints, thin webs, and timber girders.

NEW DESIGN TECHNIQUES AND UNUSUAL CONSTRUCTION

Post-war construction is able to capitalize on the greater knowledge and improved techniques of welding developed during the war. A 16-story hospital was built in Hartford, Conn., during 1946, using 3,000 tons of structural steel and the equivalent of 21,000 feet of ¼-inch fillet welds. Another indication of the increasing prominence of welded construction is the use of H-section welded roof trusses in a building for the General Electric Co. at Tiffin, O., which enables suspended loads to be located without the usual panel point limitations. Satisfactory results were obtained from tests on these trusses, and no doubt many future building designs will incorporate similar roof trusses.

During the year there was increased use of precast concrete shapes and structural units which in some cases may have been the result of steel shortages. Some buildings were constructed by using precast thin reinforced structural members. The units are connected by welding the reinforcing steel and by other ingenious methods. One of the outstanding projects using precast units was a 4,000-ft. concrete causeway at Richmond, Calif. All parts of the structure, except the pile caps, were precast, thereby simplifying and standardizing construction operations.

Considerable research on aluminum alloys was made during the war, and as a result, increased knowledge of the suitability of aluminum alloys to various types of structures is now available. The installation of two aluminum deck-plate girders as one of the seven spans which comprise a railroad bridge over the Grasse River near Massena, N. Y. is probably the first step in the increased use of aluminum in bridge structures. No attempt was made to justify the use of the aluminum span from the standpoint of economy; however, the expected lower maintenance expense, combined with the smaller erection cost, will tend to offset the high initial cost of material.

Roller bearings under each of the main pillars supporting a Los Angeles office building were used for the first time in construction history to eliminate earthquake stresses. The specially designed roller bearings permit the structure to move anywhere within a 12-inch diameter circle to absorb earthquake shocks; the roller units are designed to carry column loads of 250,000 pounds. The installation eliminates much of the additional strength in the framework required to withstand the horizontal stress caused by seismic disturbances.

A viaduct, built during the year by the Department of Highways, State of Washington, employed a very unusual pier design. The piers have a single column on the centerline of the structure in place of the conventional two column design. The dimensions of the column top at a point where it widens out to become a floor beam is 3 ft. by 6½ ft. This type of pier design was chosen as the simplest means of eliminating skewed construction in passing over two railroads and a highway.

DAMS AND RELATED CONSTRUCTION

For the first ten months of 1946 there was a ceiling on the expenditure during the fiscal year for civil works construction by government agencies. With the lifting of the ceiling in November, the U. S. Army Engineers and the Bureau of Reclamation were able to award contracts for considerable additional construction. There are dams, river developments, and irrigation projects, either under construction or being planned, in every state. In view of the large number and the impossible task of describing all of them, this section is limited primarily to a review of the major projects, either completed or under construction during 1946.

ANDERSON RANCH DAM, IDAHO

Construction on Anderson Ranch Dam across the Boise River in central Idaho consisted of adding an additional height of 156 feet of earth fill to the 300 feet which had been placed before the project was halted by the war. It is the highest earth-fill dam in the world. Much of the earth was brought a distance of several miles by a unique conveyer belt system which covered terrain impassable by any other means of transportation. It is expected that construction will be completed to the extent that 500,000 acre-feet of water will be impounded by the summer of 1948. The reservoir will provide water for irrigation, flood and silt control, and future power development. The installed capacity of the power facilities at the dam will be 41,500 kw.

DAVIS DAM, ARIZONA

Work on Davis Dam near Kingman, Ariz. was resumed by a new contract; construction of the dam was stopped in 1942 by WPB. The dam will include 3,900,000 cu. yd. of earth and rock fill, creating a reservoir storage of 1,820,000 acre-feet which will extend to within one mile of Boulder Dam, 67 miles up the Colorado River. The entire cost of Davis Dam is expected to be approximately $77,000,000 including generators, turbines, transmission lines, and finishing work. The major part of the development of the Colorado River from Lake Mead to the Mexican border will be completed with the construction of Davis Dam. Its completion will fulfill an obligation incurred by the United States in connection with the Mexican Water Treaty. Also, it will provide a source of power, regulate the releases from Boulder Dam, and give additional flood protection.

MISSOURI RIVER BASIN DEVELOPMENT

The ten-year program of flood control and utilization of water resources of the Missouri River Basin was given a substantial start in the appropriation bill passed by Congress in April, 1946. The construction is to include reservoirs, levees, and channel improvements, with the Bureau of Reclamation and the U. S. Army Engineers accepting joint responsibility in the development. Preliminary work was started on Garrison Dam located 75 miles northwest of Bismarck, N. D. on the Missouri River. It was the inauguration of the plan to develop the Missouri River Basin in the interests of flood control, irrigation, navigation, and hydro-electric power. The Garrison Dam will be the largest rolled-fill dam in the world with its estimated 75,000,000 cu. yd. of embankment, exceeding by more than four times that of Denison Dam on the Red River. It will impound at normal pool elevation some 23,000,000 acre-feet of water, inundating 390,000 acres of land and creating a reservoir extending almost to the North Dakota-Montana state line, 200 river-miles upstream.

COLUMBIA RIVER BASIN PROJECT, WASHINGTON

The irrigation phase of the Columbia River Project in south central Washington was started during the year. This project, with its coordinated system of pumping plants, dams, canals, siphons, and related works, is the largest single land development of the Bureau of Reclamation. The world's largest pumps will lift water from the reservoir behind Grand Coulee Dam to be distributed to the southern reaches of the Columbia Basin, 150 miles away. Important developments under way in the Columbia River Basin include the Potholes Dam and the East Low Canal in addition to other projects of minor significance. Potholes Dam will be completed across Crab Creek about 15 miles west of Warden, Wash. It will have a height of 200 feet and a length of 19,000 ft., giving a storage capacity of 615,000 acre-feet.

COLORADO-BIG THOMPSON PROJECT, COLORADO

Considerable progress was made on the various units associated with the Colorado-Big Thompson development of irrigation and power. Tunnels and conduits are built to carry water for use on the eastern plains of Colorado from the eastern end of the 13-mile tunnel under the Continental Divide.

CENTRAL VALLEY PROJECT, CALIFORNIA

The development of the Central Valley Project in California will provide a full or supplemental water supply for more than 2,000,000 acres of highly productive land in the San Joaquin and Sacramento valleys. The total estimated cost of about $400,000,000 classifies this project, along with the Columbia River Basin and the Missouri River Basin developments, as one of the largest programs under way by the Bureau of Reclamation. Construction during the year included work on the 156-mile Friant-Kern Canal and the 120-mile Delta-Mendota Canal.

BULL SHOALS DAM, ARKANSAS

Actual construction of Bull Shoals Dam in north central Arkansas started during the year. The dam will be 263 ft. high, and the length at crest will be 2,394 ft. The dam is part of a project under development by the U. S. Army Engineers to control floods on the White River, and when completed will be the nation's fifth largest dam and reservoir. The ultimate power installation will have a capacity of 336,000 kw.

RIVER DEVELOPMENT, KENTUCKY AND TENNESSEE

An interesting channel improvement was completed during 1946 as one of the various projects under the Tennessee Valley Authority. A 9-ft. channel on the Tennessee River, reaching from Knoxville to Paducah, Ky. joins the Ohio River channel to become a part of the inland waterway reaching Pittsburgh, Chicago, Minneapolis, St. Louis, New Orleans, Houston, and Mobile. It is estimated that, by 1960, savings in transportation costs will amount to $2,000,000 per year more than depreciation of structures, cost of maintenance, and the interest on the investment allocated to navigation facilities. The project included construction of locks, private and public terminals, installation of lights, buoys, and other navigational aids.

BUILDINGS

Construction was started on the new 26-story office building of the John Hancock Mutual Life Insurance Co. in Boston. The building will be 417 ft. high and have an estimated cost of $15,000,000. It will be the highest building in Boston, and from the observation tower it will be possible to view 25 miles to sea and 65 miles inland.

A portion of the steel work has been completed on the 33-story Esso Building addition to Rockefeller Center in New York City. The building will have frontages of 100 ft. and 274 ft. and will be erected at a cost of $6,000,000. The exterior edifice will be faced with limestone with landscaped roof gardens extending along both streets at the second floor level. The structure will be fully air-conditioned.

The U. S. Army Engineers completed a hangar at Eglin Field, Florida, designed to test the largest army aircraft at temperatures between minus 70 and plus 165 degrees Fahrenheit. In addition to the large clearances maintained, the temperature requirements necessitated the incorporation of many unique features into the design. The hangar measures 200 by 250 ft. and has inside ceiling heights of 70 ft. at the center and 35 ft. at the walls. The design of the insulation for the walls includes 13 inches of fiber glass between 1⅝ inch air spaces inclosed by interior and exterior vapor barriers. The ceiling insulation is essentially the same as for the walls, but to protect the steel roof trusses from extreme temperatures, the insulation is suspended from the lower chord members.

A review of the construction of buildings during 1946 would be incomplete without mention of the $800,000,000 hospital building program of the Veterans Administration. At the year's end, construction of the hospitals had not reached the expected volume. As in all other construction activity, the program was hampered by shortages and high costs. Originally, the Administration had planned to place in operation some 76 new hospitals by the fall of 1948, but now it is predicted that construction of many of the projects will run into 1950.

ANACOSTIA RIVER BRIDGE, WASHINGTON, D. C.

Foundation work on the Anacostia River Bridge in Washington, D. C. continued during the year. Floating caissons, fabricated at Wilmington, Del. and towed to the bridge site, were used in the pier construction. Concrete ballast was poured into the floater after it was moored in position, causing it to sink until about five feet of freeboard remained. The remainder of the sinking was accomplished by successive cofferdam attachments and concrete pours. Each pour was followed by excavating material from within the caisson with clamshell buckets.

ARKANSAS-MEMPHIS BRIDGE, MEMPHIS, TENN.

The construction of the Arkansas-Memphis Bridge across the Mississippi River at Memphis, Tenn. progressed slowly during the year because of material shortages and high costs. Work on the seven main piers and the Memphis abutment progressed on schedule, but it was generally agreed that the bridge could not be completed within the original three-year estimate under present conditions.

GRASSE RIVER BRIDGE, MASSENA, N. Y.

The new Grasse River Bridge, near Massena, N. Y. was completed, consisting of seven deck plate-girder spans, one of 90 ft., four of 100 ft., and two of 75 ft. The bridge was designed for E-60 loading and will carry the freight traffic of the Massena Terminal Railroad which connects the New York Central Railroad and the Canadian National Railway with the industrial district of Massena.

One of the 100-ft. spans is constructed entirely of aluminum alloys. As the first aluminum railroad bridge, it will serve to answer certain problems of design, production of materials, fabrication, and behavior in service which can be solved only by building an actual bridge. Direct comparison can be made between the behavior of the aluminum span and the adjacent steel spans of equal length. Reduction in weight made it possible to complete the assembly of the aluminum span in the shop and to transport it in one piece, eliminating all field assembly.

The aluminum alloy selected was 17S-T because it combines the advantages of high strength, good resistance to corrosion, adaptability to the manufacture of large plates and rolled shapes, and working characteristics suitable to standard fabricating practices. The alloy has been used also in airplanes and in the floor system of some U. S. Army pontoon bridges. The low modulus of elasticity demanded that special consideration be given to parts subject to buckling. The aluminum girders were made deeper than the adjacent steel spans to reduce the increased live-load deflection, resulting from the low modulus of elasticity.

BRONX-WHITESTONE BRIDGE, NEW YORK

Work was carried out in the program to stiffen the Bronx-Whitestone Bridge and widen its roadway according to plans which were prepared in

1941. This suspension bridge as completed in 1939 embodied the use of relatively flexible plate stiffening girders. The depth-to-span ratio of these girders was 1 to 209, making it at that time the slenderest of comparable structures, except the George Washington Bridge. The bridge has proved amply rigid under traffic, but studies carried out in 1940 indicated that additional stiffness would be desirable.

The adopted scheme for stiffening the bridge consisted of the addition of a stiffening-truss, top-chord and web members, above and in the plane of each girder. This addition will increase the original rigidity by about 60 per cent and thereby provide a degree of stiffness which will be close to that of several existing suspension bridges known to have very small noticeable oscillation under wind action.

OTHER BRIDGE PLANNING

Plans and specifications were almost completed for an 11-mile crossing at the mouth of Tampa Bay in Florida. The project will include nine sections of solid fill connected by open trestles. The longest open span, crossing the main ship channel, will be 800 ft. long and will clear the channel mean high water by about 145 ft.

The plans for two large suspension bridges were nearly completed during the year. After considerable research the design is near completion for the new bridge to replace the Tacoma Narrows Bridge which collapsed in 1940. Plans for an 800-ft. suspension bridge across the Delaware River below the Wilmington marine terminal are being completed. This bridge will provide a clearance of 175 ft. over mean high water.

MECHANICAL ENGINEERING

By Joseph J. Jaklitsch, Jr.
American Society of Mechanical Engineers

GENERAL

The year 1946 witnessed the gradual but progressive changeover from wartime to peacetime production in industry, hampered to some extent by labor trouble and increasing labor and material costs and stringent government controls. Also apparent is the present shortage of engineers caused by the wartime dislocation of the normal supply of engineering graduates. The June, 1946 Committee Report of the American Society for Engineering Education indicated that 337,000 engineers will be needed in the United States by 1950, a net increase of 76,000 or 29.1 per cent over the 261,000 available in 1940 (including about 16,000 unemployed). Since 78,000 are expected to retire, leave the profession, or die, between 1940 and 1950, a total of about 154,000 new engineers will be needed.

ENGINEERS JOINT COUNCIL

In the past year, the Engineers Joint Council, composed of the presidents, junior post-presidents, and secretaries of five national engineering societies, had several projects under way. They included a study of the organization of the engineering profession, a survey of the economic status of the engineer, and a program of international relations.

The study of the organization of the profession has been focused largely on the means of organizing engineers for common purposes in the communities in which they live, but the hope exists that a single over-all national society, which will concern itself with the non-technical interests of all engineers, may eventually be organized.

The economic status survey is in three parts: (1) A survey of employer practice regarding engineering graduates; (2) a study of the earnings of engineers by a questionnaire sent to 88,000 engineers; and (3) the preparation of a manual on collective bargaining by engineers in professional work.

The international relations program consisted of: (1) The collection of books for the libraries of devastated countries; (2) active cooperation with the various organizations of United Nations; (3) aid in organizing American participation in the International Technical Congress in Paris, Sept. 16-21, 1946, and the Sixth International Congress of Applied Mechanics, Paris, Sept. 22-29, 1946.

The International Technical Congress brought together 1,200 engineers from 50 nations to consider ways in which engineers may be increasingly useful in the major tasks of reconverting a war-torn world to peace and plenty.

A World Engineering Conference embracing all engineering professions was formed at the Congress. This body would work closely with the United Nations Educational, Scientific, and Cultural Organization, and would have as its members a national committee from each nation, which committee would represent that nation's engineering societies.

Conspicuous and important public service was rendered by the engineers of the nation in reports, prepared through the agency of Engineers Joint Council, on the disarmament of Germany and Japan. The recommendations of the German report had an important bearing on the directive of the Allied Control Council for the control of occupied Germany. The Japan report was completed in the spring of 1946 and received the enthusiastic endorsement of General MacArthur.

Another service included the expression of engineering opinion that a division of engineering be included in the Atomic Energy Commission.

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Throughout 1946 The American Society of Mechanical Engineers carried on its activities successfully. The number of members reached a new high of 21,536. Nuclear-energy and gas turbines had important places on meeting programs. The American Rocket Society became affiliated and is cooperating in program making. A Machine Design Group was organized. The Industrial Instruments and Regulators Division of A.S.M.E. held its first national meeting in Pittsburgh, Pa. in coordination with meetings of the Instruments Society of America. A Committee on Nuclear-Energy Application was formed early in the year to stimulate and develop a continuing program of Society activity dealing with the application of nuclear energy. The rush of students to engineering schools is intensifying the problem of the students and student-branch organization.

The Society cooperates in the operation of Engineering Societies Personnel Service, Inc. which has offices in New York, Chicago, Detroit, and San Francisco. During 1945, the service registered 3,561 engineers and placed 828. More than 600 positions were on the books at the end of the year.

APPLIED MECHANICS

The most significant developments in Applied Mechanics were in connection with gas-turbine developments for ship, aircraft, and locomotive propulsion.

A new journal, *Applied Mechanics Reviews,* was authorized during the year by The American Society of Mechanical Engineers and preliminary plans were started for its publication. It is to be a review journal of the applied mechancis literature of the world. It was suggested by the Office of Naval Research and will be published by the A.S.M.E. with the cooperation of the American Society of Civil Engineers, American Mathematical Society, American Institute of Physics, Institute of Aeronautical Sciences, and Society for Experimental Stress Analysis.

The Sixth International Congress for Applied Mechanics was held in Paris, France, Sept. 22-29, 1946. More than 500 attended, of which some 40 were Americans. A new name for the Congress was also adopted. Hereafter it will be known as the Union for Theoretical and Applied Mechanics, and will be incorporated into the United Nations Educational, Scientific, and Cultural Organization.

ATOMIC POWER

During the past year atomic-energy plant construction was completed, and the plants have been operating 24 hours per day and seven days per week; efficiencies have been improved, costs reduced, and plant capacity increased. A recent estimate gave present production as several times that on V-J Day. At the present time the entire operation is under the direction of the U. S. Army Corps of Engineers, through the specially constituted Manhattan District. During 1946 Congress passed the Atomic Energy Act of 1946, and it is under the provision of this act, and under the direction of the commission which it creates, that the entire atomic-energy industry must operate.

The Atomic Energy Commission will inherit the entire atomic empire, including plants, furnished and semi-furnished, bombs, and all other property now held by any government department or agency which pertains to nuclear or atomic processes. It will have sole power over the entire industry, starting with uranium ore in the ground, up to and including finished products containing and produced from uranium. It will also take over all patents, contracts, and secret information and, subject to the direction of the President, it will have sole power for disseminating information and distributing uranium products, including bombs.

The anniversary of the first liberation of large quantities of atomic energy saw active work under way on the construction of an experimental plant to investigate the generation of electrical energy in machinery equipped to utilize the heat energy of controlled atomic fission. The possibility that this method may replace the use of conventional fuels as a source of energy for power generation was recognized and discussed, but this has had no visible effect on the expansion of the facilities for the use of the common fuels in central stations.

The peacetime use of atomic energy in the production of radioactive materials for medical and biological purposes is now under way on a semi-commercial basis. Another important outgrowth lies in the field that has been opened up for the separation of isotopes which may lead to important developments in chemistry and metallurgy.

FUELS

The increasing availability of liquified petroleum gases at reasonable cost encouraged their use as replacement for oil and coal in gasification plant and in some engine applications. Production and distribution facilities for all fuels were taxed by a continued high rate of economic activity with the result that fuel stocks of many kinds were very low and localized shortages were a frequent result of the widespread economic disorder. A notable example of the effect of other shortages on fuels was the limitation necessarily imposed on the efficiency of most gasoline engines by a government limitation on the maximum allowable octane rating of motor fuel because of the shortage of lead for the production of tetraethyl lead.

One notable development in power generation from coal, the result of a number of years of development, is the so-called cyclone burner, described at the December, 1946, Annual Meeting of the A.S.M.E. The device is characterized by simplified auxiliary equipment, extremely low fly-ash emission, and high rates of heat release.

Research on all fuels accelerated. Active work began on the expanded program of the Bureau of Mines on the production of synthetic fuels from coal. Development activity increased on the application of coal to the gas-turbine locomotive under the auspices of a group of railroads and coal companies.

GAS TURBINES

The year of 1946 has seen many veils of secrecy lifted from work being done in the gas-turbine field, both here and abroad. The results of German, Swiss, Swedish, British, and American experiments have been revealed, gas turbine designers and manufacturers have had an opportunity to study prior developments and are now scheduling their own research.

Today the gas turbine is firmly established for supercharging internal-combustion engines, pressurized boiler furnaces, and chemical processes. As a prime mover it has made a definite place for itself in military aircraft and appears to be on the threshold of important commercial aircraft application. Major development programs are under way in the railroad, marine, and stationary fields, and a number of experimental and commercial units have been built.

Much information has been released on constructional materials for gas turbines, and various hydrocarbons are being investigated for their possible use as gas-turbine fuel. Of special interest in the last-mentioned category is the work being carried on investigating the burning of pulverized coal in the locomotive gas turbine. Also in the locomotive field, Brown Boveri has announced its tests of a 4,000-hp oil-burning locomotive gas-turbine unit. For ship propulsion, several developments are under way sponsored by the Navy.

The marine gas turbine, as built by the Elliott Company, is continuing development. It is interesting to note the work being done at the Annapolis Testing Laboratory on an experimental 3,500-hp unit built by the Allis-Chalmers Manufacturing Corporation which has already completed extensive tests at 1,350 F and has been at gas inlet temperatures as high as 1,500 F. The General Machinery Corporation also has a machine under development. All three consist of an air compressor, combustion chamber, and gas turbine, and the three schemes differ from each other mainly in their air compressor. With the Allis-Chalmers machine the air compressor is an axial turbocompressor; with the Elliott Machine it is a screw-type direct displacement compressor, while the General Machinery Corporation employs a "free-piston" compressor.

A 2,000-hp oil-burning gas-turbine generator set has been built by Westinghouse Electric Corporation, and the design features of its major components and a progress report of its operation were discussed at the Annual Meeting of The American Society of Mechanical Engineers held Dec. 2-6, 1946. Dr. Adolf Meyer, of Brown Boveri, Switzerland, announced at this meeting a new device, called the "comprex," which greatly increases the compression ratio, efficiency, and output of the gas turbine. It will be applied to the gas-turbine locomotive. Great interest in rockets and jet-propulsion was evidenced by numerous papers presented.

In the aircraft field, turbo-jet gas turbines are being developed by many firms, and rapid progress is being made. Again the various schemes differ mainly in the type of compressor used. There are multistage axial-flow turbocompressors as well as one- or two-stage centrifugal compressors in successful operation, while a free-piston compressor is in an advanced stage of development.

HEAT TRANSFER

A number of advances in the theory, basic data, and application of heat transfer was accomplished during 1946. On the subject of thermal conduction, a mathematical analysis of the temperature distribution during high-speed welding was completed, and charts were presented to facilitate analysis of temperature distributions in transient heating of solids, particularly for induction heating. Information on the transverse heat flow through laminated metal sheets was also presented.

On the subject of forced convection, additional experimental and theoretical information on the effect of a number of the many design variables in shell-and-tube heat exchangers was provided. Certain fundamental relationships involved in the problem of cooling and heating by means of molten metals, such as sodium and mercury, were treated theoretically.

Heat transfer between hot gas streams and granular solids, a process of great importance to the chemical industry, was studied.

Heat-transfer problems in aircraft were given much attention, particularly by aircraft manufacturers. Progress included not only practical improvements and greater knowledge in the usual problems of engine cooling and in passenger comfort, but also important advances in problems arising in jet-propelled aircraft and in use of heat for anti-icing. For jet engines, new thermal insulations were developed, resistant to high temperatures but of light weight. For prevention of ice deposits on airplane parts in adverse weather, the method utlizing heated air flowing inside the leading edge of the wing was adopted commercially on a production scale, and much pertinent information on that subject was disclosed, including consideration of ice prevention on windshields and radar equipment.

On the subject of radiation, information was provided on improvements in the design of infra-red ovens used for drying, particularly of painted surfaces, and successful application of such methods to drying of gunpowder was described. Improved equipment for use of gas for radiant heating of ceramics was also described and new designs of orchard heaters were proposed.

Thermal measurement methods continued to be developed and improved. Information was disclosed on techniques useful for study of ice prevention problems, and improvements were made on a device that allows a simple direct measure of the heat lost through the walls of buildings. Information on various new forms of a temperature-sensitive electrical-resistance element, for a wide range of usefulness, was also disclosed.

HYDRAULICS

Manufacturers of hydroelectric equipment have been relatively busy since 1941. The anticipated drop in consumption of electricity at the end of the war has not occurred. In many cases there are increases.

With the increase in the cost of labor and fuel, such as coal, existing hydroelectric developments have become more valuable; their generating capacity is not endangered by such interruptions as railway and coal miners' strikes.

Private interests again are beginning to construct hydroelectric projects. Notable among these are the Idaho Power Co., the Southern California Edison Co., New England Power Co., and the Pacific Gas and Electric Power Co.

In the government agencies the Bureau of Reclamation is proceeding with several major projects. Six of the 150,000-hp units at Grand Coulee are in operation, three additional units are partially constructed, and three additional units have been ordered.

The Tennessee Valley Authority has ordered two additional units for existing plants and has also resumed work on the Wautaga project. The Army engineers have released several postponed projects.

The Bureau of Reclamation has ordered six of the pumping units for the Grand Coulee Irrigation system. These pumps are driven by 65,000-hp motors and are the largest pumps ever planned not only in this country but, it is believed, in the entire world.

In technical developments the increased use of welding in hydraulic turbines is important. Not only in spiral casings but also in such items as stay rings, top plates, and even fabricated runners has welding become common.

Improvements in the sensitivity and accuracy of hydroturbine governors have resulted in a considerable amount of replacement where old and obsolete governing equipment is being discarded and newer and more modern is taking its place.

INTERNAL-COMBUSTION ENGINES

There have been several important developments in the field of internal-combustion engines. Of major interest is the commercial development of the dual-fuel or gas-Diesel engine, a unit capable of burning either oil, gas, or a combination, on the Diesel cycle, with instantaneous automatic transfer from one fuel to another. The dual-fuel principle has been applied to 2-cycle as well as 4-cycle engines, and dual-fuel engines can be supercharged.

The art of supercharging Diesel engines has made rapid strides. For 4-cycle engines supercharging has become accepted practice in the marine and railroad fields where savings in engine size and weight are important. Exhaust-gas turbo-supercharges boost engine output anywhere from 30 to 50 per cent, supercharging pressure being about 4 psi.

STEAM POWER

In the field of steam power, no revolutionary developments have been made. Steam temperature has increased steadily, if slowly, and the 900 to 950-F range is no longer considered advanced. Several large plants to operate at 1000 F steam temperature are now under construction. At the same time operating pressures most commonly used have dropped to the 800 to 900-psi range. This does not represent a step backward, however. Most of the plants built before the war were "superpositions," and in such cases pressures of 1200 to 1500 psi proved most economical. Most of the central stations which could be "topped" have been, and present utility-plant construction is mostly new condensing plants. In such plants, which will be more efficient at the low-pressure end, the economical pressure level works out at 800 to 900 F.

The standardization of steam turbine sizes has been brought about by a joint committee organized by the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. Six sizes of turbines between the ratings of 11,500 kw and 60,000 kw have been decided upon.

Recent advances and improvements of power generating and power consuming equipment have qualified the heat pump to play an important part in industrial heating and cooling applications because of its inherent characteristics for efficiently converting waste or otherwise unused natural heat into a more useful form.

A new method of steam production, permitting operation on poor feedwater or even raw salt water, has been proposed by Mark Benson, designer of the Benson boiler. In this new steam producer, all evaporation takes place outside the furnace zone, and all heat-transfer surface is in economizer and superheater sections. Demineralization and degasification of feedwater is carried out in units comprising standard elements arranged in a unique fashion. Elements of this steam producer have been tried out on a pilot scale, but no full-scale construction has yet been attempted.

LUBRICATION

Considerable work has been done in the direction of investigating the utility of silicone fluids as substitutes for petroleum lubricants. Such properties as low-viscosity, temperature slope, nonvolatility, and low freezing point—all very desirable in a lubricant-combined with the heat stability, oxidation resistance, and general chemical inertness of silicones—indicate that silicone fluids would make almost perfect lubricants for any sort of application.

MANUFACTURING TECHNIQUES

Probably the most important single factor in the development of machines and machine tools in the last year was progress in the development and application of carbides to the metal cutting industry.

While carbides were first developed in Germany, their development and use in this country was expedited by the necessity of increased production created by the war. Most prominent in the usage of carbides was their application to milling cutters.

A reduction in the number of teeth on the milling cutters, coupled with vastly increased feeds and speeds, increased production far beyond the limitations set by the standard high speed steel cutters.

The use of carbides also brought about the development of the inserted-tooth cutter and the incorporation of sufficient weight in the cutter body to produce a certain flywheel effect.

Carbides were also successfully used for single-point tools for turning and boring. They were especially applicable for operations on heat-treated and hard surfaced materials.

Carbides were responsible for the development of negative-rake tools and the perfection of a high degree of surface finish coupled with extreme accuracy. In many cases, the use of carbide tools eliminated the necessity for finish grinding the product.

During the development of carbide tools, it was found that the effectiveness of this cutting material depended largely upon the rigidity of the machine on which they were applied. Under war conditions, the machine-tool builders were seriously restricted in the development of machines of sufficient power and rigidity to handle carbide tools to the maximum of their capabilities. The increased speeds and feeds demanded greater horsepower, and the reduction in the number of teeth and the consequent shock called for more rigid machines. As a result, much of the equipment now in use is inadequate where high production is a requirement. These factors are recognized by the machine-tool builders who, freed from restrictions, will, in many cases, redesign their machine tools with the requirements of carbide tooling in mind.

The application of carbide cutting tools has brought about a consideration of the application of additional flywheel effect on milling machines. This, however, is still a controversial subject. Research on the use of flywheels has shown that no definite procedure can be followed. Numerous variable factors enter into the application of a flywheel to each individual job, with the result that, far from being a panacea for all troubles, the flywheel can only be applied effectively after an intensive study of the particular machine and the particular application involved.

Beginning with the July, 1946, issue, The American Society of Mechanical Engineers now publishes *Metal Cutting Data.* This publication is intended to keep the reader in touch with new developments, metal cutting tools, and methods by which production is being increased.

MATERIALS HANDLING

The problems of materials handling has been brought forcibly to everyone's attention, and because of increasing material and labor costs, broad programs have been started in this field in order to answer the many problems confronting users of materials-handling equipment. Work is commencing on the standardization of shipments on skids and pallets. Suggested standards for the small machine and equipment models now often used in plant layouts have been developed. At the suggestion and with the active cooperation of the U. S. Navy, work on the standardization of machine and equipment templates has been started.

METALS ENGINEERING

The past year was a period of reorganization in industry, resulting in a widespread adoption of methods and techniques developed during the war for metal parts fabrication.

Precision casting methods have been adopted for heat resisting alloy parts. Expanded knowledge of methods of de-gassing light alloys has greatly improved the quality of aluminum and magnesium alloy castings. The use of special risers and exothermic materials has resulted in improved soundness of castings, particularly steel and bronze castings. The technique of powder metallurgy has been made available to industry.

By combining press blocking and hammer finishing procedures, magnesium alloy forging production has been facilitated. The recently installed 18,000-ton press at the Wyman-Gordon Products Corporation in Grafton, Mass. is the largest press in the country and will be available for the production of large light alloy forgings which were previously unattainable. The use of precast multiples and direct cast billets as forging stock has resulted in more economical forging production in many cases.

By using die-making practices developed by the aircraft industry, there have been appreciable savings in the cost of manufacture of cold-stamped products.

Electronic controls in arc welding and gas cutting have improved the quality and precision of these operations. The gas shielded arc welding processes have made possible very high quality welds in magnesium and aluminum alloys and stainless steels. The development of the gas pressure welding process for heavy sections makes possible the welding of an economical combination of castings, forgings, and rolled or extruded shapes to produce metal structures.

The use of shot peening and flame and induction heating processes for improving the dynamic strength of metal parts is one of the most significant developments in the metallurgical aspects of design.

One of the very encouraging developments in metals engineering is that industry and the engineering schools have realized the need for more thorough and fundamental training in this field and steps are being taken, particularly by the casting industry, to cooperate with the engineering schools to help provide this training.

RAILROADS

Despite the fact that 90 per cent of the country's railroad freight is being handled by the steam locomotive there is a definite trend to the Diesel-electric locomotive in not only freight but passenger service at a rate limited principally by the manufacturers' ability to meet the carriers' ordering requirements. On Sept. 1, 1946, locomotives on order totaled 556, of which 69 were steam, six electric, and 481 Diesel-electric. This compares with a total of 512 locomotives on the same date in 1945 which consisted of 107 steam and 405 Diesel-electric.

Welded locomotive boilers are now being built for the first time in United States railroad-equipment history by the American Locomotive Co. This development climaxes nine years of experimental operation of a welded boiler installed on a locomotive of the Delaware and Hudson Railroad. The boiler has been completely free of leaks during this period, and all of the welded seams are said to be still in perfect condition.

During the year several manufacturers introduced new models of road Diesel-electric locomotives.

A new 6,000 hp all-purpose locomotive has been built by Alco-G-E for the Santa Fe Railway System. It consists of three cabs, each having a single 2,000-hp turbo-supercharged, 1,000-rpm, V-type, 16-cylinder Diesel engine. A companion to the 6,000 hp locomotive is a 4,500 hp, 3-cab freight locomotive.

The Electro-Motive Division of General Motors Corporation started production of the F-3 basic General Motors Diesel Locomotive, which by a simple change of gear ratio between traction motor and driving axle can be equipped to excel in seven categories from that of the heaviest lugging mountain freight locomotive up to that of a heavy-duty passenger locomotive with top speed of 100 miles per hour.

The Ingalls Shipbuilding Corporation has manufactured a 1,500-hp road-switching locomotive utilizing a 660-rpm, 1,650-bhp supercharged Superior Diesel engine.

Probably the largest Diesel-electric yet purchased is an 8,000-hp, 4-cab locomotive being built by Fairbanks, Morse and Co. for freight service on the Kansas City Southern Lines.

A 3,000-hp single-cab unit has been built by the Baldwin Locomotive Co. for the Seaboard Railroad. Mounting two 1,500-hp supercharged 4-cycle De La Vergne engines, it is the largest single cab Diesel-electric built to date.

The trend in the design and fabrication of passenger equipment leaned toward streamlining, welding *versus* riveting, use of lightweight high-tensile structural materials, air-conditioning, use of plastics for trimmings, antifriction journal bearings, individual or double bedrooms versus open sections in sleepers, fluorescent lighting, and numerous other improvements.

In the fabrication of freight equipment, developments utilizing lighter weight materials, increased volumetric capacity, occasional use of tubular axles, and compensating brakes have been common.

To expedite discovery of "hot boxes" before the danger point is reached, especially in passenger service, several devices have been developed which give visible, audible, or olfactory warning when journal-box temperature exceeds a safe figure.

The Locomotive Development Committee of Bituminous Coal Research, Inc., continued its activities aimed at the development of a bituminous coal-burning gas-turbine power plant for locomotive use. Work is being processed on the development of a suitable coal-handling and coal-pulverizing system, and a combustor arrangement to provide gas of suitable cleanliness for feeding to a gas turbine.

The Committee has placed orders with turbine manufacturers for two turbine-compressor-generator power plants of 3,750 hp each. One plant will include an axial-flow compressor, while the second will utilize a centrifugal compressor. Conventional direct-current electric drive will be used in adapting these units to locomotive use. It is expected that each of the locomotives will develop 3,000 hp at the rails.

MATERIALS

The demands for stainless steels continue to increase. It is estimated that 1946 production will exceed or at least equal that of 1945. Of all stainless steel produced, the chromium-nickel types comprise more than two thirds of the total.

The need for materials to withstand the exceptionally high temperatures of jet and gas-turbine engines has given great impetus to the development of so-called "super-alloys" for high-temperature service, and as the demand for such engines becomes popular, a considerable market for these materials may be anticipated.

Industry is paying increasing attention to the engineering characteristics of alloy irons. Of note are the high-strength gray cast irons containing 1½ to 5 per cent nickel which are being used in Diesel-engine crankshafts and cylinder liners and for aircraft piston rings. Strengths up to 100,000 psi are being obtained.

A new cupro-nickel-aluminum bronze containing 12 per cent nickel, 0.6 per cent iron, 1.0 per cent manganese, and 1.5 per cent aluminum combines superior resistance to salt-water corrosion and excellent mechanical properties, including 85,000 to 95,000 psi tensile strength.

There has been a marked expansion in the peacetime use of iron-nickel alloys possessing specialized thermal expansion properties as a result of more general use of automatic controls in electrically operated and temperature controlled products. The thermostatic bimetals ordinarily used to actuate these devices employ alloys containing 36 to 42 per cent nickel for the low-expansion side and a variety of alloy types containing 20 to 70 per cent nickel for the high expansion side.

A strong trend toward the use of nickel, Monel, Inconel, and other high-nickel alloys for consumer products has become widely evident.

A broad series of standard triple alloy steels containing nickel, chromium, and molybdenum, in which all the significant alloying elements are made under precise control, have become available to industry as a result of wartime experience.

The number and variety of new and lighter products of magnesium, lightest of all structural materials, is constantly growing. Magnesium is now free from government control and is available for civilian uses.

PLASTICS

Probably the greatest advance in plastic materials during 1946 was made in the field of thermoplastic vinyl polymers. While most of the vinyl resins were produced for the usual processes of compounding, extruding, and calendering, there were other forms of resin polymers appearing, such as latex, pastes, or "Plastisols," and "Orgonosols." All three of these are fluid types and are used for the formation of sheet, film, or surface coats without the use of ordinary extrusion and calendering equipment.

Polystyrene became available in much larger quantity. However, no outstanding technical improvements were noted although progress was made in its technique of control, compounding, and fabrication.

A copolymer of styrene was introduced, called Plexene M, which has the water-resistance of polystyrene and is superior in its strength, toughness, solvent resistance, and resistance to weathering.

Methyl-methacrylate was found to be in larger demand both as fabricated from sheet and as molded. Polyethylene, because of its flexibility, toughness, lightness, and moisture resistance is in peacetime demand for use in extruded film and foil and for molded articles. Polyfluoroethylene was announced under the name of Teflon. It is an extremely stable compound, unaffected by acids, alkalies, solvents, water, or temperatures up to 300 C.

In the field of polyamids, some new forms of Nylon became available in limited quantities. Most interesting are the leather-like flexible sheets or molded products and the thin film or foil.

In the field of polyesters there was further development of resinous plasticizers and of unsaturated alkyd resins to be used in combination with a vinyl monomer (usually styrene) for the production of low-pressure laminates.

In the field of cellulosic plastics, the use of gel lacquers from cellulose acetate butyrate was disclosed. Also cellulose propionate was produced in substantial quantities.

In the field of thermosetting condensation resins, the melamines, ureas, and phenolics, there were changes in formulation brought about by the shortage of certain raw materials.

Significant developments during the year of vulcanizable elastomers included combinations of synthetic rubber with various plastics, such as Buna N synthetic rubber with vinyl chloride polymers and with phenolic resins. The silicone resins underwent considerable development and study. They are beginning to find commercial applications not only as electrical insulating materials and bonding agents but also as lubricants and elastomers.

Additional work on materials is reported, including starch ethers, improved ion exchange resins, new furane resins, some work on protein resins, discussion of plastic properties as a function of molecular structure, reports of resistance plastics to bacteria, fungi, and insects.

One of the most notable advances in the plastics industry was the broad and general adoption of high-speed transfer molding of thermosetting materials with the aid of high-frequency electronic preheating.

RUBBER

Government release of the natural rubber for tire manufacturing was the single most important event to the industry during the year. It is claimed that the tires being produced now, with the increased percentages of natural rubber and the improved synthetics, along with the numerous other advancements, are superior to prewar natural rubber tires.

Phenolic plastic resins are reported to blend with synthetic rubbers to produce adhesives of outstanding quality. Research on synthetic rubber and latex already has reached the stage where new molecule building is almost a daily occurrence.

Recent reports have referred to research development of a new white reinforcing material which functions in much the same manner as does present-day carbon black by embellishing the physical properties of a vulcanizate.

Much has been reported this year

on the physical chemistry of high polymeric systems.

Research work on vulcanizing agents has unfolded an entirely new class of non-sulphur halogen compounds beneficial to GR-S.

Approximately 80 experimental polymers were put into worthwhile production in 1946. These polymers were developed for all kinds of end products. Many of these experimental types were modifications of butadiene-styrene copolymers, resulting from the use of new emulsifiers and coagulants.

In extensive production are a whole new set of high heat-resistant elastomers. Some of these withstand continuous temperatures of 300 F and endure temperatures of more than 500 F for 8 to 10 hrs. They can also be used effectively at temperatures as low as minus 70 F.

Forward strides have been reported in transfer and injection molding. New innovations in continuous Buna S preparation and continuous coagulation of Hevea latex have also been reported.

The report of the discovery of an entirely new class of non-sulphur vulcanizing agents for the butadiene-styrene copolymers has been of tremendous interest to the rubber industry's compounding chemists.

Carbon blacks, the mainstay reinforcement for synthetic and natural rubbers, have been improved and further studies have been made to aid compounders in their problems of mixing stocks and bettering the vulcanized properties.

INSTRUMENTS

After the war's end, important servomechanism theoretical and design material was declassified and so made available for control. The frequency analysis approach is most useful, especially the Nyquist test for stability. From the servomechanism field came the parallel-T networks so useful for offsetting the unstabilizing effects of resonant peaks.

Computers of various sorts have likewise made considerable progress from their differential analyzer predecessors. Some of the modern computers continuously use the answer as it is obtained. This basically follows the servomechanism or control approach of continuously eliminating the error in a dynamic system.

Cross-fertilization of instruments from different fields has opened up many post-war potentialities. For example, a trend appears to exist toward making panel instruments coordinated to be readable at a glance, as far as detecting any indication which is out of line. There has been a deep penetration of the industrial instrument field by electrical instruments, especially for central-control installations using telemetering.

REFRIGERATION

Refrigeration received a great impetus during the war as exemplified by its application to many new uses in industrial plants, food industry, and transportation, especially those involved in shipping perishables overseas to millions of the armed forces.

The first post-war year has seen the beginning of many civilian applications of methods developed during the war, the most advertised of these being the home freezer. The greatly increased public interest in frozen foods has also resulted in their handling by approximately 40,000 retail outlets. The volume of frozen foods sold represents, however, only about one per cent of all the fresh produce sold.

Domestic refrigerator production has not yet reached pre-war levels, but new models are designed to fit into complete streamlined kitchens and include compartments for storing frozen foods.

Among industrial applications may be mentioned the experimental plant of the National Advisory Committee for Aeronautics, Cleveland, O., in which great masses of air moving at high velocities for testing airplanes can be cooled in short periods of time from 200 F to subzero levels.

The war stimulated research into the better production of low-temperature gases such as oxygen and helium, and new machinery is now available to reduce the costs of these commodities. This is also true of liquid and solid carbon dioxide ("Dry Ice").

With the return of peace, many new self-contained air-conditioning units for comfort cooling as well as applications to industry, food processing, and transportation have been developed.

A new engineering quarterly *Refrigeration Abstracts,* was initiated by the American Society of Refrigerating Engineers during the year as a result of a demand for sources of information in the field of refrigeration.

An *Educational Guide to Refrigeration and Air Conditioning Training Facilities in the U. S.* was also published by the American Society of Refrigerating Engineers in 1946.

The widespread interest in refrigeration and air conditioning was clearly exemplified by the All Industry Show held Oct. 29—Nov. 1, 1946. Cleveland, O., participated in by more than 200 exhibitors and attended by 20,000 persons.

HEATING, VENTILATING, AND AIR CONDITIONING

Progress in heating, ventilating, and air conditioning in 1946 was characterized by slow and painful but noticeable advances on many fronts rather than by any spectacular single development.

The heat pump (reverse refrigeration cycle) received considerable recognition. Plans were under consideration for the purchase by utilities of 1,000 heat pumps for house heating and 10,000 units for hot water heating in order to provide additional data and experience. Investigations of this device were under way by the Southern Research Institute and Armour Research Foundation, and two manufacturers have introduced such units commercially.

The University of Illinois, as part of its small homes research, completed a one-story 5½ room house in which various phases of warm air heating will be studied. The Bureau of Mines announced development of a stoker-fired hot water heater burning sub-bituminous coal. A study by the U. S. Weather Bureau indicated that the trend toward warmer weather in the United States, which began 41 years ago, apparently reversed about 1936 and that we may now be on the upward scale of a cycle tending toward colder winters and cooler summers.

Research at Purdue University, where two houses, identical except that one had 12 per cent of all area in glass and the other 22 per cent, indicated that a 9 per cent saving in heat requirements would result from taking advantage of the sun's heat.

The installation of radiant heating in a midwest industrial plant was announced. Progress was made in the Pacific northwest in the use of electric cable for radiant heating although this method is still only practicable where electric rates are exceedingly low. Additional manufacturers introduced baseboard radiators designed to replace the conventional baseboard, the object being to make heating equipment in the room practically invisible.

Virtually smokeless coal-burning furnaces and stoves developed at the University of Illinois are expected to be available in 1948. A midget-sized furnace burning gas was announced late in the year by a company which had developed a gasoline-burning airplane heater and which is now adapted to room heating. Not much larger than a suitcase, it is said to be capable of heating two and a half rooms.

The American Society of Heating and Ventilating Engineers, which has conducted research in its laboratory since 1920, purchased its own building in Cleveland, O., for use as a laboratory and moved there during the year. Among the 1946 results from this organization's research is a new friction chart, badly needed for duct design, and new data on friction loss in exhaust hoods. Twenty-two projects are under way.

A house utility unit produced as a prefabricated package and which provides space and water heating, plumbing, refrigeration, kitchen, and bathroom facilities was placed on the market.

The National Bureau of Standards, during the year, released information on heat loss through slab floors and conducted studies on baseboard radiators. Battelle Memorial Institute conducted extensive surveys on the desirability of district heating.

In transportation equipment, air conditioning in varying degrees was provided for a number of new and modernized passenger vessels and late in November, 1946, a completely air-conditioned liner, the *S. S. Del Norte,* made its first trip from New Orleans to tropical east coast ports of South America.

A 17,000-ton heavy cruiser *Salem* was under construction at Quincy, Mass., and it will be the U. S. Navy's first fully air-conditioned warship. In June, 1946, work was begun on sealing and dehydrating with dehumidification equipment approximately 2,200 Navy vessels to prevent the ships from rusting while idle. Air conditioning was applied to the Lockheed *Constellation* to overcome heat generated in the cabin and to offset skin friction of the plane moving through the air at high speeds. Two types of air-conditioned buses, one inter-city and one intra-city, were placed in service during the year. One hundred air-conditioned trolley cars were ordered for Atlanta as a result of experimental work during the preceding year. A new railway passenger coach with full air conditioning was shown in September, 1946, by a railway-car manufacturing company. Each car system is complete in itself and operated by a power take-off from car axles. An electronic air cleaner designed for railroad-car installations was placed on the market.

STANDARDIZATION

An intensified program of standardization was started. Progress continued toward agreement between Great Britain, Canada, and the United States on a series of standard screw threads. The principal point of difference, the angle of the thread, has been settled by the adoption of 60 degrees.

During the year three American Standards in the mechanical field have been approved. These are The American Standard, Gear Tolerances and Inspection, The American Standard, Life Tests of Single-Point Tools Made of Materials Other Than Sintered Carbides, and the third American Standard approved is for involute splines.

Upon recommendation by the Mechanical Standards Committee of the American Standards Association, the Standards Committee has approved the initiation of a new project, namely, a number system for antifriction bearings.

ELECTRICAL ENGINEERING

By HARRY SOHON
ASSISTANT PROFESSOR, UNIVERSITY OF PENNSYLVANIA

SCOPE

This section describes some of the new developments in the field of electrical engineering. It represents a cross section of the field, including some of the small projects as well as some of the larger ones, some of the unimportant innovations as well as some of the momentous improvements. The fields of radio and sound equipment are covered in separate sections, and therefore developments in these phases of electrical engineering are not included here.

PRIZES AND AWARDS

Philip Sporn, executive vice-president and chief engineer of the American Gas and Electric Service Corporation, New York, was awarded the Edison Medal for 1945 by the American Institute of Electrical Engineers.

This medal is the highest award made by the Institute and was presented to Mr. Sporn at the convention in January 1946 "for his contributions to the art of economical and dependable power generation and transmission."

The Hoover Medal for 1945 was awarded by the American Institute of Electrical Engineers to W. H. Harrison, vice-president in charge of operation and engineering, American Telephone and Telegraph Company, "who in times of peace has been devoted to his civic services and effective in his recognition of the essentials of human betterment, and who equally in times of war, inspired by the same ideals, has generously served his country."

David C. Prince, vice-president, General Engineering and Consulting Laboratory, General Electric Co., received the Lammel Medal of the American Institute of Electrical Engineers at the Summer Convention held in Detroit during June 1946. The award was made for "distinguished work in the development of high-voltage switching equipment and electronic converters."

The Washington Award was presented to Dr. Vannevar Bush in recognition of devoted, unselfish, and preeminent service in the advancement of human progress. This award is conferred each year by the Western Society of Engineers on the recommendation of a committee representing the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, and Western Society of Engineers.

David E. Harris, vice-president of the General Electric Supply Corporation in charge of Pacific Coast operations was awarded the 1945 Medal for cooperation given under the James H. McGraw awards for electrical men. The award was made to recognize Mr. Harris' 40 years of participation in nearly every cooperative activity on the Pacific Coast.

The John Fritz Medal was awarded to Dr. L. W. Chubb, director of the Westinghouse Research Laboratories, "for pioneering genius and notable achievements during a long career devoted to the scientific advancement of the production and utilization of electrical energy." The medal is awarded by the four national engineering societies.

NEW PROJECTS

Central Arizona Light & Power Co.—Among the new projects inaugurated during 1946 are the following: The Central Arizona Light and Power Co. is spending $2,750,000 for additional facilities. These are intended for the steam-electric plant near Phoenix. A 33,000-kw unit will generate 12,500 volts and will be driven by a 3,600-rpm turbine. A gas and oil fired boiler will furnish 900 pounds of steam per hour.

Arkansas Power & Light Co.—A $20,000,000 expansion program has been announced by the Arkansas Power and Light Co. New transmission lines are to be built, automatic equipment installed, and transformer substation capacities increased. In addition to these items, the erection of over 3,500 miles of new rural lines nearly doubles the number of farm customers to more than 50,000. In order to expedite this program, the company is making some internal changes that include the formation of an Industrial Development Department to encourage industries to move into the company area. An Agricultural Development Department has been formed to educate the farmers. An employees training program has been started, which includes courses in executive standards, job training, and electronics. A model distribution system is planned for line and maintenance crews to acquire experience in solving practical problems.

Pacific Gas and Electric Co. will add two 100,500-hp turbine generators to the "Station P" steam plant in San Francisco. The units will operate at 3,600-rpm with a pressure of 1,500 psi at 900° F. Steam will be provided by four outdoor boilers each of which will produce 450,000 lbs of steam per hour.

San Diego Gas and Electric Co. is installing a new 50,000-kw steam unit at a cost of more than $5,000,000. It is to be housed at the site of the Silvergate generating plant. The boilers for the unit will be fitted to use either oil or natural gas as fuel.

Connecticut Light and Power Co. is starting a five-year improvement program to cost over $22,000,000. This will include a 45,000-kw turbo-generating unit at the Devon plant. This unit operating at 3,600 rpm will be hydrogen cooled and will generate 13.8 kv. It will be connected through a 50,000-kva transformer bank to a 69-kv outdoor substation. Steam will be supplied by two 225,000-lb per hour boilers at 850 psi and 925° F. In addition to the new unit at the Devon plant, there is to be a 31,250-kw turbo-generator at the Montville station near New London. This will replace two 10,000-kw units. The new generator is to be driven by a turbine supplied by one 300,000-lb per hour boiler at 850 psi and 950° F.

Delaware Power and Light Co. is building a 90,000-kw plant on the Delaware River at Wilmington. The cost is expected to be in the neighborhood of $13,000,000. It will be interconnected with the Deep-water and Chester power plants of the Philadelphia Electric Co. A 66-kv transmission line is being erected to Dover to provide additional power to the Kent and Sussex County area.

Florida Power and Light Co. is spending $24,000,000 on an expansion program. This includes a new plant at Sarasota of 18,000-kw and a new plant at Riviera Beach of 42,000-kw. The program also includes substations, transmission lines, and over 600 miles of rural line.

Georgia Power Co. is building a new steam station on the Flint River near Albany. Two 22,500-kw turbo-generators and two 230,000-lb per hour boilers are to be installed. The generators are hydrogen-cooled, 25,000-kva, 0.9-pf, 3,600 rpm. The boilers are outdoor type supplying steam at 850 psi and 900° F.

Allatoona Dam.—Work has been started on the Allatoona Dam project on the Etowah River near Cartersville, Ga. The dam is to be 190 feet high and 1,325 feet long. The reservoir is expected to contain 722,000 acre-feet of water and to extend for 32 miles upstream. Two 36,000-kw generators are to be installed first, with provision made for an additional 36,000-kw unit later. A 2,000-kw service generator will provide power for station lights and auxiliaries.

Public Service Co. of Indiana is entering upon a $6,500,000 program for expanding its generating and transmission equipment. A 37,500-kw generating unit is to be installed at the Edwardsport station, and at the Dresser station near Terre Haute a new steam generator with 300,000-lb per hour capacity at 650 psi and 915° F. is being installed.

Mississippi Power and Light Co. is investing $20,000,000 in a new program. It includes four new 110-kv lines totaling more than 200 miles in length. There is also to be 1,500 miles of rural lines, adding over 4,000 new rural and farmer customers.

Public Service Electric and Gas Co. of New Jersey is starting a $200,000 plant at Sewaren on Arthur Kill. Two 100,000-kw high pressure units will be installed. The turbines are to be hydrogen-cooled. One boiler will be provided for each unit, and fuel can be either pulverized coal or fuel oil.

Southwestern Gas and Electric Co. is erecting a new plant at Caddo Lake near Mooringsport. It will be provided with a 25,000-kw unit at first and will eventually be increased to four times that capacity. Natural gas is to be used as fuel with the turbines working at 850 psi and 900° F.

Central Ohio Light and Power Co. plans an expansion to cost over $650,000. It will include installation of new steam generating equipment in the Woodcock plant near Bluffton and construction of an additional 34,500-volt line from Bluffton to the Findlay plant. This will give 20,000 additional horsepower to Findlay.

Texas Electric Service Co. is initiating an $8,000,000 project. Some of the features of the project are the installation of a 40,000-kw turbine-driven generator at Handly near Fort Worth and the construction of 50 miles of 60-kv power line to complete the industrial power loop around Fort Worth.

Texas Power and Light Co. plans a $4,000,000 expansion. This will include an 85-mile transmission line from Jewett, Leon County, to Lufkin where a large substation is to be built. About 1,000 miles of rural lines will be added to the system, and the capacity of many substations will be increased to provide for increased services.

Rumford Falls Light and Water Co. is planning to change its distribution from 40 cycles to 60 cycles. The power is generated by the Rumford Falls Power Co. which supplies power to the Oxford Paper Co. and to the Light and Water Co. The paper company will continue to be served with 50-cycle power; the conversion is only for the light and water company. Two 5,000-kva frequency changers are to be used. They consist of three-phase, 40-cycle, 2,400-volt synchronous motors driving three-phase, 60-cycle generators. The output is a three-phase four-wire circuit with 4,160 volts line-to-line and 2,400 volts line-to-neutral.

SWITCHING DEVICES

A novel type of mercury switch known as the Mercu-Trol is now available. An iron plunger is arranged so that its descent displaces the mercury in a reservoir and the mercury rises and completes the circuit between two contacts. If the control is to be normally open, the plunger is allowed to float on the mercury until it is pulled down by the actuating coil. If the control is to be normally closed, the plunger is weighted so that it sinks and must be drawn up by the actuating coil.

A light-weight three-phase circuit breaker has been developed for use on 120-volt 400-cycle systems in planes. The operating solenoids are designed for low current and operate over wide ranges of temperature. The breaker uses high gas pressure and multiple arc gaps. The confinement of the arc to a closed chamber makes the device independent of altitude, and it also reduces the fire hazard.

A sectionalizing switch is now available for use on network secondaries. It contains a current coil that functions as an overload release. In addition there is a voltage coil that is connected across the contacts. When the contacts are closed the voltage coil is short circuited and introduces no losses. In case of a fault, the high current in the current coil opens the contacts. As soon as the contacts open, the line voltage appears across the contacts which energizes the potential coil to hold the contacts open. The contact will remain open until both sides of the contacts are brought to the same potential by replacing the fuse or closing the breaker to the faulted transformer. This arrangement keeps unfaulted transformers from trying to carry the entire load, which, of course, might result in their fuses or circuit breakers opening and interrupting service on the entire system.

A suggestion for post-war house wiring is the use of push-button operated relays in place of customary snap or toggle switch control for house lights. The advantages claimed include the fact that the load circuit is shortened by the omission of the loops required to take in one or more switches. The control is by means of low-voltage relays placed in the circuit where convenient. The relays can be operated by one or more push-button stations without any changes being required in the power circuit wiring. By using low-voltage relays energized from a low-voltage transformer, similar to the bell-ringing transformer, it will not be necessary to enclose the control wiring in BX or loom for common annunciator or bell wire may be used. It will be simple to arrange for light control at each door of each room. In addition a master control panel can be placed in the home owner's bedroom so that any or all of the lights can be controlled from that room. Thus it will be unnecessary to go downstairs to turn out the light that was left burning in the cellar or on the porch by mistake. Furthermore, in case of a burglar's presence being suspected, the lights can be turned on which will generally persuade the intruder to leave.

MATERIALS

During the war, mica became scarce; and therefore the Robert Bosch Co. developed a substitute, which material can be used, for example, between commutator segments. It consists of several layers of impregnated glass fiber, which is impregnated in a vertical machine such as that used for varnished cambric. It is then passed through an oven where it is heated to 120° C and is cooled to room temperature again in about 15 minutes. The material is then cut into strips, and three strips are molded together under pressure and at 160° C for five minutes. After this it is ready for use. The material can withstand 250° C continuously and temperatures up to 320° C for short intervals.

Aluminum as the structural material for substation construction has been found a definite advantage. Such a substation was erected in Erie, Pa. The main advantages are that the aluminum is not corroded by the chemicals in some atmospheres as in the case of steel; therefore, there is no need to paint the structure which, in addition to the labor and material cost, requires some of the circuits to be de-energized for the painters' safety. A further advantage is that the actual erection is greatly simplified because the members are so much lighter. They can be handled much quicker without the need of machinery. The weight of an aluminum structure is about half the weight of an equivalent steel structure.

A new recommendation has been made to the large-machinery manufacturers that they use liquid cooling in the electrical machinery, which cooling is said to be far superior to air or hydrogen cooling ordinarily used. The heat transfer to the liquid coolant and the heat conduction are considerably better than other means. The liquid coolant further tends to equalize the machine temperature so that temperature differences are less with consequent reduction in hot-spot temperature.

COMPUTING DEVICES

An alternating-current calculating board has recently been put into operation at the Armour Research Foundation. It is the fourteenth such board built in the United States. There are three more on order by Agricultural and Mechanical College of Texas, Los Angeles Department of Water and Power, and the University of Kansas. Of the 14 present owners of a-c boards all but five have d-c boards to solve some of the problems. These calculating boards simulate various steady-state conditions on distribution systems. An immense saving is achieved by using single-circuit connections even though three-phase equipment is being simulated. Possible studies include circuit loading, bus voltages, transformer ratings, and capacitor ratings required for power-factor improvement. By making use of sequence circuits, it is possible to predict the effect of various types of short circuits and faults that might take place at different locations in the system. Stability studies can be made by noting the phase angles existing in different parts of the system. Certain types of transient studies are possible even though all measurements are of steady-state conditions. Study of arcing grounds and other similar effects are susceptible of solution with the proper manipulation of circuit voltages. The calculating boards consist of a collection of resistors, inductors, and capacitors, with means for connecting various sized components in different circuit arrangements. Instruments are available to read current, voltage, power, and phase angle in any part of the circuit. The alternating-current board is able to give results in general with greater accuracy than the direct-current boards do. In addition, the a-c board can be used for stability studies and study involving relay action that d-c boards are incapable of handling because there is no way to represent or measure phase angle difference in d-c boards.

A differential analyzer has been bought from the General Electric Co. by the University of California. It is to be housed in one of the new buildings on the Los Angeles campus. It is the sixth instrument of its kind in the United States. The original analyzer in this country was designed by Dr. Vannevar Bush. The older machines have generally been modified to include the improvements made as the art progressed. The machines now use polarized light to activate electric torque amplifiers instead of the original brake-band type of torque amplifier. This and other improvements increase the speed of operation so that satisfactory accuracy is achieved without undue slowness of operation.

MAINTENANCE EQUIPMENT

The Consumers Power Co., Jackson, Mich., has developed a "hot-line shield" that is available for general use. It is made of laminated plastic; the outer layers are duck base and the inner layers paper base. The shield consists of three cylindrical sections: an 8-inch diameter tube that is placed horizontally on the insulator pin and enclosing the live wire; a 5-inch diameter tube is placed around the wire at each end of the pin-covering tube. These three sections will cover about 12 feet of the wire and allow workmen to pass close to the wires and to haul tools and equipment to lines above without the necessity of de-energizing the lower line. Protection is afforded for voltages up to 14,400 volts. This is greater protection than was available with the old types of rubber protectors. It is also found that these plastic shields are simpler to store and service than the rubber shields.

Line crews are called upon to travel from place to place to keep electric power lines in service. Distances covered may be many miles from headquarters and from job to job. Companies are trying to provide better transportation facilities for their crews. One arrangement uses a special cab on the line truck. This cab carries five men in addition to the driver. The main drawback is the increased cost of the truck and the reduced turn-in value because it is a specialized design. Another plan uses a conventional line truck with an extra seat placed in the body of the truck. This proves satisfactory for small crews but not for larger crews of 10 to 12 men. For these crews, the Los Angles Department of Water and Power has provided special buses. Provision is made in the body of the bus for carrying small tools and packages in racks, and the back of the bus is available for carrying tool boxes and larger equipment.

The Public Service Co. of Colorado has found an interesting solution to the problem of maintaining service in regions where travel of repairmen and delivery of emergency material are hampered by snow and ice. A government surplus half-track snow motor is being used in the region where the Shoshone-Denver line crosses the Continental Divide. The half-track is fitted with wheels and skis in front. Either can be used separately or both together. In the latter case the skis are a little higher than the wheels so that the wheels carry the weight if possible, and any tendency for the wheels to sink in and become mired will be prevented by the skis carrying the load. This is ideal where the snow is spotty as a result of drifting winds. Without some such means of transportation the workmen must travel on snowshoes, and it is practically impossible to move any heavy repair equipment until good weather. With this device, the workmen's travel time is cut to a small fraction, and there is no question of holding up repair work because the snow auto can shuttle back and forth with men and equipment at 15 to 20 miles per hour after it has once packed the snow along the road.

The Pacific Gas and Electric Co. has developed a system that has facilitated to a marked degree the location of faults on buried cables having non-metallic sheaths. The scheme is to make resistance measurements first in order to find the approximate location of the fault. Then 10,000-

volt impulses are applied to the cable, and the exact position of the fault is found by means of a sound-pickup device. It was found that a crystal vibration pickup worked very well instead of the conventional microphone.

The Wisconsin Public Service Corp. has solved the problem of Frazil ice at its Bayside Steam plant. There was a tendency for ice to form in the trash racks and block the intake to the condensers. The solution consists of diverting some of the output water into the intake channel to warm the water to 40° F and thus prevent the formation of such ice. When the weather becomes colder Green Bay is frozen over, and it is possible to stop the re-circulation and take full advantage of the cooler water at the condensers.

RECTIFIERS AND INVERTERS

Electronic exciters are becoming more common as time goes on. Rectifiers have been competing with rotary converters and motor-generator sets for quite a while where the load consists of the customary direct-current load such as railway motors, elevator motors, and electrolytic cells. More recently rectifiers have been used as exciters for synchronous motors and synchronous condensers. In one of the most recent applications. rectifiers are used as exciters of large alternators. An electronic exciter has just been installed in the Springdale station of the West Pennsylvania Power Co. It is used as exciter for one of the 25,000-kva generators. It contains a rectifier transformer connected delta-6-phase star. The rectification is carried out by ignitron tubes. The firing of the ignitrons is controlled by means of thyratron tubes so that the rectification can be regulated to provide for variations in the load and terminal conditions.

An unusual frequency-changer installation is in use at the Gary Sheet and Tin Mill plant of the Carnegie-Illinois Steel Corp. The plant has two power systems. One is the 60-cycle public utility; the other is a company owned 25-cycle system. The frequency on the public-utility system is kept within 0.16 per cent, but the company-owned 25-cycle system keeps its frequency only within 6 per cent. Since both of these systems are about the same size it is impossible to use ordinary rotating frequency changers because they would try to force both systems to keep the same frequency deviation and hence would interchange energy between the two systems at the wrong times and in the wrong amounts. It would be possible to use two ac-dc motor-generator sets with the a-c machines in the respective systems and the d-c machines to provide the connecting link. However, it was decided to avoid the use of rotating machinery entirely and use mercury-arc thyratrons in a similar scheme.

There are two 25-cycle thyratrons. Each is connected for 6-phase operation, and if both are used together the combination is 6-phase. There are two 60-cycle thyratrons also. They are each connected 6-phase, but when the two are used together the circuit is made 12-phase. To transfer energy to the 60-cycle system the 25-cycle thyratron acts as a rectifier to produce direct current which is changed to 60-cycle current in the 60-cycle thyratron acting as an inverter. To transfer energy to the 25-cycle system the 25-cycle thyratron becomes the inverter and the 60-cycle thyratron becomes the rectifier. The frequency changer is made self-synchronous by connecting the grids of the 60-cycle thyratron to the 60-cycle system and the grids of the 25-cycle thyratron to the 25-cycle system. Consequently the device can be made to transfer energy in whichever direction is desired for any values of frequencies that exist in the two systems. This frequency changer is rated at 6,667-kw. This figure was chosen as being one third of an eventual 20,000-kw installation. The potential of the d-c link between the two systems is nominally 1,750 volts. At this voltage it is found that a 15-mh reactor is useful as a smoothing reactor. This reactor has a further function in protection.

There are always the possibilities of arc-backs and arc-throughs. The arc-backs are quite rare and generally take place on the rectifier side and cause comparatively little trouble. On the other hand an arc-through is an inverter fault that corresponds to short circuiting the d-c side. The 15-mh reactor is useful here in that it reduces the current build-up rate in case of arc-through so that the protective breaker can interrupt the current before it has become too great if the grids of the thyratron do not regain control in the meantime.

The d-c breaker is of novel design in that it consists of six breakers connected so that three units open one at a time followed by the remaining three together. Each of the first three units insert resistance in the circuit and the last three actually break the circuit. A further matter of interest is the sensitivity of the changer to voltage fluctuations. Only a few per cent change of voltage can produce 100 per cent change in load. For this reason it was found necessary to use electronic regulators because the mechanical types of regulators were found too slow in their operation.

INDUSTRIAL HEATING

Dielectric heating is found to be of great aid in curing and drying rubber. Such materials are poor heat conductors, hence considerable time is required to get the heat to the inner portions when an oven or other conventional system is used. By using high frequency of 6 to 30 megacycles the heat is produced throughout the rubber, and the curing time has been cut in some cases in half, in other cases to one tenth the former time.

Infrared lamps are now being used to dry pottery before it is fired in the kilns. Formerly, "waste" heat from the kilns was used for this purpose. but it is now found that by using infrared lamps the drying time is reduced to approximately one tenth, which means that economies in the other steps are possible to offset the cost of the heating current. It is also found that defects in the pottery show up oftener during the drying process instead of during the baking process, and this means more economical use of the ovens. In an installation of the Buffalo Potteries Co. lamps of 1,000 watts and of 500 watts are used, and the company reports that no lamp failures occurred in over 1,000 hours of operation.

Radio Corporation of America has two new models of induction-type electronic power generators. One is a 2-kw unit using two 833-A tubes in parallel in a Colpits circuit; the other is a 15-kw unit using two 892-R tubes in parallel in a Hartley circuit. For both units a 25-foot cable is provided to connect the oscillator to the applicator unit so that there is considerable flexibility in the use of the units. The frequencies are approximately 400,000 cycles. Plans are under way by the company to add two additional sizes to the list, one a one-kw unit and the other a 75-kw model.

SPECIALIZED EQUIPMENT

A new departure has been made in induction-motor construction. The device is a linear motor. The squirrel cage has been developed to lie flat and extends nearly 1,400 feet in length. The primary is also developed to lie flat but is only a few feet long. It is mounted on a small car that runs on rails on either side of the squirrel cage. The polyphase currents in the primary produce a gliding field that causes the car to run along the track. The device is installed on an airplane runway at Patuxent River, Me.

A gausse meter is now available for checking flux gradients in air gaps and for determining the direction and density of flux in leakage paths. It is in a two-inch case made of textolite and has a hollow bronze exploring prod at the back. It is especially useful in production testing of permanent magnets and for checking electromagnets and relay coils.

The development of types of equipment usable in atomic research was kept secret during the war. Some of these devices are now being publicized. One of these is the betatron, a device for accelerating electrons to immense velocities. The electrons are accelerated while traversing a circular path something like the condition in the more widely known cyclotron. However, there is this fundamental difference, that in the cyclotron the particles are accelerated during two short parts of the circular path by means of electric fields, whereas in the betatron the electrons are accelerated by means of a magnetic field along the entire path. The device is similar to a transformer except that, instead of moving in the secondary winding, the electrons move in a vacuum tube. The electrons are accelerated to their final velocity in one quarter cycle of the magnetic field. By means of adding a constant-current "bias" to the exciting current it is expected to be possible to accelerate the electrons during one half cycle which will give greater velocity with little redesign of the instrument.

The Hartford Electric Light Co. has made a report on the operation of its mercury unit. From the time of installation to the beginning of 1946 the unit was in operation 80 per cent of the time. The 20 per cent unavailability included all causes for either the steam or mercury cycles. The efficiency of the unit can be approximated from the following figures. The heat rate is slightly over 10,000 Btu per kw-hr. However, of each kw-hr output in this figure for the heat rate only 400 watt-hours are in electrical energy, the remaining 600 watt-hours are in steam energy and to find the total watt-hours in electrical energy the 600 watt-hours must be multiplied by the steam-turbine and electric-generator efficiencies.

RADIO

By G. L. Beers

RCA Victor Division, Radio Corporation of America

GENERAL

The year 1946 gave the radio industry its first post-war opportunity to concentrate attention on peacetime pursuits. It can not be considered as a normal year because of the unprecedented demand for radio equipment resulting from wartime production restrictions. On the other hand, material shortages and strikes imposed serious limitations on the types and quantities of units which were produced. The expansion of new broadcasting services, such as frequency modulation and television, was likewise seriously handicapped by lack of equipment and restrictions on the construction of new buildings to house the transmitters and studios.

THE FEDERAL COMMUNICATIONS COMMISSION

In February 1946, Paul A. Porter, Chairman of the Federal Communications Commission, resigned at the request of the President to become Administrator of the Office of Price Administration. Commissioner Wills took office in July 1945, but died suddenly at Brockton, Mass., March 8, 1946. Commissioner Charles R. Denny was appointed Acting Chairman, and Rosel H. Hyde, General Counsel of the Commission, was nominated by the President to complete the unexpired term of Commissioner Wills. In the first week of December, Acting Chairman Denny was appointed Chairman by the President.

The Federal Communications Commission was faced with the greatest volume of work in its history. Wartime restrictions had prevented the licensing and construction of nonmilitary radio communication facilities, and at the end of the war applications for licenses for all types of civilian communication facilities were filed. In addition to the abnormal requests for increases in facilities for existing services, a tremendous interest was shown in the many new services such as FM broadcasting, television, and a variety of special communication services to meet the needs of transportation and other industries.

The general hearings on the allocation of frequencies held during the latter part of 1944, and through 1945, had indicated the desire on the part of industry for frequencies to establish new services. After the announcement of the general frequency allocation by the Federal Communications Commission, it was necessary to proceed with further engineering conferences and oral arguments in order to determine exact divisions and operating and engineering standards for the various portions of the radio frequency spectrum.

FCC HEARING ON CLEAR CHANNELS

Of particular importance to the standard broadcast field was the hearing ordered in January 1946 with respect to the so-called Clear Channels. The standard broadcast band is presently divided into several types of frequency assignments or channels, each for a particular use domestically and by international agreement in the North American region. A few of the channels are for use by local stations and are occupied by a very large number of low power stations, restricting each other by reason of interference to relatively small areas surrounding towns or metropolitan districts. Other channels are designated for the use of regional stations and are occupied by a smaller number of stations with more power, restricting each other by reason of interference to a region which may include a metropolitan district and a considerable portion of the surrounding area. A few channels are to be used by high power stations serving a large part of the country at night. Some of the high powered stations operate on channels on which there are no other stations at night, and these clear channel stations with sufficient power could serve most of the United States because they are not limited by interference from other stations on the same frequency. The issue in the clear channel hearing is the desirability of maintaining a number of clear channels, occupied by high power stations or the breakdown of such channels to permit the assignment of more stations, giving coverage with higher signal intensity but limiting each other in their over-all coverage by reason of mutual interference. Hearings with respect to this matter were held during 1946, and it is probable that a decision will be reached sometime in 1947.

FCC ACTION ON BROADCASTING

As an indication of the Commission's tremendous work load during 1946, there follows a list of the actions taken up to November 1946 in the field of broadcasting:

Standard Broadcasting—	1034 stations licensed
	425 construction permits outstanding
	648 applications pending.
Frequency Modulation Broadcasting—	48 stations licensed
	945 initial authorizations, which includes conditional grants
	281 applications pending.
Television—	7 stations licensed
	38 construction permits issued
	33 applications pending.

INTERNATIONAL TELECOMMUNICATIONS CONFERENCES

In June 1946, the State Department called meetings to review the United States proposals for revision of the International Telecommunications Convention and Regulations. In accordance with the present Convention, the Department sent telegrams to all nations, suggesting that an International Telecommunications Conference be held in the United States, beginning April 1, 1947.

By July 1946, the United States had obtained the agreement of the required 20 nations and was prepared to call a World Telecommunications Conference in this country in April following. At the same time, the Soviet Union invited the United States, Great Britain, France, and China to attend a preliminary Five-

Power Conference. The Five-Power Telecommunications Conference was held in Moscow Sept. 28, 1946 to Oct. 24, 1946. It was planned to permit each Delegation to present the background of its proposals and thus obtain unanimity of thought when preparing final proposals for the International Conference. The Conference was more successful in achieving this end than the United States delegation had expected. It was agreed that a preliminary World Radio Conference be held in the United States beginning May 15, 1947 to permit the engineers to prepare a new allocation table and a new international list of frequencies. The Plenipotentiary Conference will be held in the United States beginning July 1, 1947.

NORTH AMERICAN REGIONAL BROADCASTING CONFERENCE

The North American Regional Broadcasting Agreement, signed at Havana Dec. 13, 1937, expired March 28, 1946. The agreement covered the allocation and use of standard broadcasting frequencies in the North American region. Canada and the United States had proposed that the agreement be extended on a temporary basis because the war had prevented the expansion visualized by the original agreement. Cuba maintained that the facilities granted to her by the Agreement were insufficient and insisted on a conference to propose a new Agreement. The Conference was held in Washington Feb. 4-25, 1946.

Canada, Mexico and the United States, because of their extensive areas, had each been granted a number of clear channels, whereas Cuba, with a limited area to cover, was given only one clear channel. The Cubans did not insist on the assignment of clear channels to Cuba, but objected to the number of frequencies which the agreement prevented them from using. The difficulty arises from the fact that the Cuban broadcasting system involves a large number of stations in Havana, and such stations are so close to the border of the United States that interference would result were they to operate on United States clear channels. The primary purpose of the North American Regional Broadcasting Agreement is to protect stations of each country from interference from stations in other countries. Cuba, requiring only limited coverage, is not seriously affected by interference but is capable of very serious interference to the wide coverage clear channel stations in other countries.

The Cuban Delegation, after threatening not to sign the Agreement, finally obtained the use of 10 clear channels (5 United States, 2 Mexico, 3 Canada). It is generally agreed that this compromise is to the disadvantage of the United States but was accepted rather than face the interference which might result if no agreement were in force. The United States succeeded in having a permanent North American Regional Engineering Committee established to make investigations in the event of interference and to recommend remedial action.

MILITARY RADIO EQUIPMENT

Early in the year the Government released information on the wartime development of air-borne television equipment for military purposes. The two types of equipment known as "Block" and "Ring" were publicly demonstrated in March 1946 at the Anacostia Naval Air Station. The demonstration was sponsored jointly by the Navy and the Radio Corporation of America.

The "Block" equipment consisted essentially of a small light-weight television camera and transmitter. The transmitter operated at a frequency in the region of either 100 or 300 megacycles and had a power output of approximately 15 watts. This equipment was considered to have a reliable operating range of 10 to 15 miles, although satisfactory pictures were frequently transmitted over considerably greater distances. The "Block" camera was designed for mounting in a fixed position, and in flight the orientation of the camera was dependent entirely upon the position of the plane. One of the primary applications of this type of equipment was in guided missiles.

The "Ring" equipment was developed for reconnaissance work and was capable of picking up and transmitting television images over distances of 150 to 200 miles. The transmitter operated at approximately 100 megacycles and had a power output of 1 kw. The "Ring" camera was mounted so that it could be "panned" by an operator and objects held relatively stationary in the picture while the plane was in flight.

An Army radar experiment which aroused considerable public interest was conducted in January 1946. In this experiment high power radar signals were directed at the moon and the reflected signals were successfully received.

RADIO RECEIVERS

The total industry production of AM, FM, auto and television receivers for the year 1946 is estimated at 13,885,000 units. This estimate is based on industry production figures for the first 11 months. Of this total, FM and television receivers accounted for only 175,000 and 10,000 units, respectively. The number of FM receivers produced was seriously limited by the lack of wood and manufacturing facilities for producing console cabinets. Television receivers were not manufactured in any quantity until the fourth quarter. A large majority of the AM sets were table model instruments housed in plastic cabinets.

Receiving tube production for 1946 is estimated as 182,200,000. Approximately 2,822,000 tubes of the non-receiving types were produced.

AMPLITUDE MODULATION (AM) BROADCASTING

During the year the Federal Communications Commission received an unprecedented number of applications for AM broadcasting stations. Of the nearly 400 AM construction permits issued between V-J Day and Sept. 19, 1946, approximately 50 per cent were issued in cities with no existing radio stations as of V-J Day. These cities had populations of 50,000 or less.

The interest evidenced by the newspapers during 1945 in the radio broadcasting business continued during 1946. A specific manifestation of this interest was the purchase of Station WCAU in Philadelphia by the *Philadelphia Record*.

The 24th annual convention of the National Association of Broadcasters was held in Chicago during the week of Oct. 20. For those who could not gain access to the rooms in which the daily sessions were held, a number of television receivers were installed in the exhibition hall. The convention activities were picked up by Image Orthicon cameras and reproduced on these receivers. A considerable portion of the Convention program was broadcast by Television Station WBKB.

FREQUENCY MODULATION (FM) BROADCASTING

The anticipated post-war expansion in FM broadcasting was delayed by the difficulty in obtaining transmitting equipment suitable for operation in the frequency band from 88 to 108 megacycles and by the limitations on new building construction. The Petrillo (AFM) requirement that additional musicians be hired when FM stations carry the same program as AM stations was also a retarding influence.

The Federal Communications Commission as of Oct. 1, 1946 had issued over 500 construction permits and conditional grants for FM stations. Of this number, approximately 75 per cent went to individuals or organizations with interests in AM stations. Thirty-eight per cent of the total had newspaper interests.

Operation in the 88 to 108 megacycle band was begun by a number of FM stations during the year. Some stations, however, continued to transmit programs on the frequencies between 42 and 50 megacycles which were assigned to FM broadcasting before the war. At the end of the year, the FCC ordered those stations which were operating between 42 and 44 megacycles to move temporarily to the 44 to 50 megacycle band and indicated that all FM stations in this band would be discontinued as soon as a reasonable number of post-war FM receivers had been sold.

Two new types of FM receivers were produced during the year. The first type employs a continuously operating oscillator whose frequency is controlled by the frequency variations of the received signal. The oscillator is responsive to frequency variation only and is not affected by amplitude modulation of the received signal. In the second type a special detector-discriminator combination, known as a "Ratio Detector," is employed. The output currents from the two diodes employed in this circuit are caused to flow through a common load resistor. The total voltage across this resistor is automatically held constant. The voltage developed across this resistor by one diode can not increase without a corresponding decrease in the voltage from the other. The variation in potential across either one of the diodes is utilized as the audio output voltage. Amplitude variations in received signals cause the rectified current through the common load resistor to change but does not affect the audio output voltage.

A new tube called the "Phasitron" was introduced for use in FM transmitters. This tube may be employed in the type of FM transmitter in which the phase of the carrier frequency wave derived from a crystal controlled oscillator is varied directly in proportion to the strength of the modulating signal.

TELEVISION BROADCASTING

Early in the year a number of the television stations discontinued broadcasting while equipment changes were made to permit them to operate on the new frequencies to which they were assigned as a result of the frequency reallocations announced in 1945. The operating schedules of most stations were increased during the year although the majority did not meet the FCC proposed minimum requirement of 28 hours of programs a week. The FCC postponed until 1947 the date on which all commercial television broadcasting stations must meet this requirement. On Dec. 1, 1946 there were seven stations licensed, 38 construction permits had been issued, and 33 applications were pending.

During the year the American Telephone and Telegraph Company's coaxial cable between New York and Washington was used to send programs in both directions between the two cities. The Philco Corporation used a radio relay system to rebroadcast in Philadelphia television programs originating in New York. An exchange of programs between the Philco station WPTZ and the NBC station WNBT was instituted toward the end of the year.

Some of the outstanding television programs broadcast during 1946 were sporting events, such as the Louis-Conn fight, the championship tennis matches, and the Army-Navy football game. An estimated audience of approximately 150,000 viewed the Army-Navy game by television. A number of excellent dramatic productions and variety shows were broadcast. Advertising agencies and industrial organizations sponsored numerous programs during the year.

PORTABLE IMAGE ORTHICON CAMERA

In 1946 the first post-war commercial television pickup equipment was delivered to television broadcasters. An important item in this equipment was the portable Image Orthicon camera. The development of the Image Orthicon camera tube was announced late in 1945. This tube provides an increase in sensitivity under unfavorable light conditions of at least 100 times that of pre-war pickup tubes. Cameras employing this tube make it possible to televise indoor and outdoor events under the most unfavorable lighting conditions and thus greatly extend television program possibilities. A special feature of these Image Orthicon cameras is a turret lens arrangement which makes it possible for the camera operator to select in a few seconds any one of four lenses of different focal lengths. The small optical image required by the Image Orthicon together with the small physical dimensions of the tube made possible for the first time the use of such a turret lens arrangement. Focusing of the camera is accomplished by moving the Image Orthicon with its electrical focusing and deflecting coils back and forth along the optical axis while the lens remains stationary.

MICROWAVE EQUIPMENT

Microwave relay equipment was made available to broadcasters during the year. This equipment was developed for transmitting television signals from remote pickup points to the television broadcasting station. Highly directive parabolic reflectors are employed in both the transmitter and receiver and provide a power gain of 5,000 or more, depending on the size of the reflector. The transmitting tube used provides a power output of approximately 100 milliwatts at 7,000 megacycles. This type of equipment is capable of transmitting television signals over line of sight distances of 10 to 20 miles.

TELEVISION RECEIVERS

It is estimated that approximately 10,000 television receivers were produced in 1946. The total number of receivers in use at the end of the year was slightly under 20,000.

A number of technical advances are found in post-war television receivers. Improvements in the input circuits has increased the signal-to-noise ratio in the receiver so that a very acceptable picture can now be obtained with signal strengths of 200 microvolts. The automatic frequency control type of synchronizing system has been incorporated in television receivers to increase their immunity to the effects of noise and interference. In systems of this type the picture synchronization is not affected directly by each received synchronizing pulse but the frequencies of the horizontal and vertical deflection oscillators are controlled through a synchronizing pulse averaging process.

The brighter pictures with greater contrast which are provided by post-war television receivers are the result of improvements which have been incorporated in television picture tubes. The directly viewed tubes employed in 1946 receivers are capable of producing pictures with a highlight brightness of at least 60 ft. lamberts with an area contrast ratio of 75 to 1. This improvement in light output and contrast has been made possible by the development of phosphors of the all sulphide type with higher efficiency and by the technique of applying a very thin coating of aluminum to the back of the fluorescent screen in picture tubes. The aluminum coating acts as a mirror to cause the light, which normally would be lost inside the picture tube, to be reflected through the face of the tube as useful light. Special picture tubes capable of operation at anode potentials up to 30 kilovolts and designed for use with the Schmidt or reflective type of optical system has made it possible to produce television receivers which project 15 by 20 inch pictures having a highlight brightness of 20 ft. lamberts.

COLOR TELEVISION

Development work on color television continued through the year. Sequential color television images were broadcast experimentally by the Columbia Broadcasting System using a transmitter operating on 485 megacycles. The standards which they employed were changed during the year from 120 fields to 144 fields, and the channel width requirements increased to 16 megacycles.

In the fall of 1946 the RCA Laboratories of the Radio Corporation of America demonstrated a simultaneous all electronic system of color television in which images in the three primary colors were transmitted simultaneously and reproduced by superimposing the three images on a viewing screen.

An RMA-RTPB committee was active during the year in studying the various factors which affect standards for a color television system.

At the end of the year, the committee issued an interim report which concluded that much work remained to be done before a satisfactory set of color television standards could be established.

On Dec. 9, 1946 the Federal Communications Commission began hearings on a CBS petition which requested the establishment of a proposed set of standards for commercial color television.

TECHNICAL PROGRESS IN SOUND EQUIPMENT

By W. J. Morlock
RCA Victor Division, Radio Corporation of America

GENERAL

The year 1946 must be viewed as one of the most critical in the history of sound equipment. Because of the large demand for sound equipment, many manufacturers proceeded to put into production their pre-war equipment with only minor modifications. They hoped that, by not taking time to re-tool, production could be speeded up. Also, they believed that ordinary manufacturing problems would be kept at a minimum. Unfortunately, owing largely to shortages of basic materials and components, this plan was not so successful as anticipated.

Sound equipment requires practically the same general type of components used in radio. However, because of the scheduled production of the suppliers to the large manufacturers, it was difficult for many of the sound equipment firms to obtain component parts and delivery of materials. This was especially true of sheet steel. Consequently, 1946 closed with the large commercial demand for sound equipment still unsatisfied.

Definite trends have been established which are noticeable. The demand has been for high quality equipment, even though the price was considerably higher than the market would bear in the pre-war era. Because of the lack of this equipment, owing primarily to OPA ceilings and the manufacturing difficulties encountered, any equipment reaching the market was easily sold. The Government Service experience has demonstrated to many who are returning to private industry the value of sound equipment in their businesses. This will certainly have a pronounced effect on the growth of the commercial demand for sound equipment in the future.

SOUND AMPLIFYING SYSTEMS

The commercial demand for engineered sound systems for factories and offices was not alleviated to any great extent because of the same shortage of materials and lack of qualified personnel to handle this type of installation. With the cessation of the priority system, many manufacturers posponed the procurement of this equipment. The various sound manufacturers have announced especially designed equipment for factories and offices, but it has not appeared on the market in any appreciable quantities. In 1947 many new improved components will appear on the market. The improvements will be basically of more rugged construction, wider range, and better quality. In general, the type of operation is taking on the general characteristics of the equipment used in the radio station broadcasting studios.

The trend is for any new modern industrial plant to be equipped with a suitable sound broadcasting system in order to carry on effective programs of promoting employee morale and cooperation. With labor relations in a critical stage, many manufacturers have found that sound systems have provided them with a means of intimate contact with their employees. The incorporation of special features, such as time signals, fire alarms, and special broadcasts, has given these systems a definite utility value as well as one of morale.

16mm SOUND PICTURE PROJECTORS

Although experience with 16mm sound projectors by the Army and Navy had greatly increased the public desire to use 16mm equipment, many problems have been encountered in producing these equipments during the difficult reconversion period.

In spite of announcements of new designs, practically all of the equipment delivered to the market has been of the basic designs previously used but slightly restyled. There have been announcements by approximately 30 new manufacturers who indicated they will manufacture 16mm sound picture projectors. The trend is to make the equipment lighter in weight and easier to operate.

A few background projection equipments of the cabinet type have found their way into industrial and advertising applications. As with the other type 16mm equipments, this type of application will be more widespread as production difficulties are eliminated.

The improvement in performance has been slight. Non-reflection coating for the projection lenses has come into quite general use. Most of the wire type reels have been replaced by metal stamped units. Some of the carrying cases have been made more convenient and neater in appearance.

Most of the manufacturers are making exceptional claims for the new equipment that they intend to produce. Several of them are reporting that they will have light-weight single-case a-c/d-c equipments which are very convenient for use in the classroom. There have been announcements of high-intensity-arc 16mm equipment for theatre use, but as yet this type of projection has not come into general usage.

The military, realizing the inadequacy of converted equipment, let contracts to several manufacturers during the year for equipments to be specifically developed and designed for military use. As a result of this, development work will be carried on which may be later reflected in improvements in the commercial equipment.

The use of training films has penetrated the educational and industrial field and has created the demand for a large volume of sound projectors. This demand is augmented because of the availability of the government training films to our educational and industrial institutions.

SOUND SYSTEMS IN EDUCATION

The U. S. Department of Education continued to establish specifications for guidance in setting up sound systems for schools and colleges. In many states the basic plans have been completed for frequency-modulation broadcasts from a central broadcasting station to the schools within the area utilizing the new f-m wave lengths which were allocated by the Federal Communication Commission. These plans have been held up because of lack of available equipment. The educational field is extremely interested in seeing the basic plans materialize, and in many cases orders have been placed far in advance of expected delivery.

New consolettes have been announced which provide for ease of operation and a minimum of space. The consolettes are provided with f-m radios.

Various manufacturers have added new items of a sound nature to their line for specific sale to educational institutions. The principal one is a means of wire recording for instructions in voice and public speaking. Various types have been announced, but those employing "slip-in" cartridges are most promising as they eliminate the necessity of the operator handling the very fine wire. This method of recording will doubtless become very popular with the educational institutions owing to the low maintenance cost of magnetic recording, since the medium can be erased and used over again. In addition to the wire recording devices, other disk type recorders which are economical to operate are finding their way into the educational market.

SOUND SYSTEMS FOR HOSPITALS

A great expansion of hospitalization facilities has occasioned a demand for sound equipment, which provides entertainment and relaxation for the patients and assists in the administration of the hospital. The use of pillow type reproducer has increased, and various manufacturers are at present producing units which give a creditable performance. This type of sound distribution provides a method of entertainment which can be individualized to the extent that adjacent patients are not disturbed.

BROADCAST SPEECH INPUT EQUIPMENT

Post-war broadcast problems have prevented the release of a great many newly designed equipment items, and most manufacturers were forced to devote the greater portion of their time to the manufacture and production of pre-war models. There was, however, a scattered release in limited quantities of some high fidelity equipment. Newer designs appearing on the market show an increase in use of plug-in equipments and components. This new equipment shows a very high performance standard, the result of the demand upon manufacturers by the f-m broadcasters. The new equipment has a greater freedom from distortion than the old, and has less inherent extraneous electrical noise. Since it was primarily designed for use with f-m systems, the listeners employing f-m receivers will receive the greatest benefit.

Recording systems have also been improved and new cutter head designs have lowered distortion to a negligible value. Frequency response has been increased to over 10,000 cycles. Temperature compensated cutters for use with acetate recordings have removed the variation in frequency response caused by changes in ambient temperatures. The efficiency of these cutters has been increased considerably which lowered the driving power required for good recording. Magnetic wire and magnetic tape recorders are receiving considerable attention, as the broadcaster has many applications for magnetic recorders in studio and field recording services. The greatest use of the magnetic recorder will undoubtedly be for the recording of programs that are rebroadcast at a later time. This is especially advantageous to the western stations who record eastern programs broadcast at a time convenient to eastern listeners, but not to those in the West. The recorded program can then be released at a time most suitable for listeners in that part of the country. It is apparent that, for the best results, the system must be free from mechanical failures and be able to reproduce the original program without loss of quality. This, the present recording systems are able to do.

SOUND MOTION PICTURES

A new type of color picture film, which was demonstrated by its manufacturer a year ago, is assuming major importance to the motion picture industry, as well as to amateurs. The film base is coated with three differently sensitized emulsion layers. In these layers are incorporated die coupling agents which, when activated by the products of silver development, become dyes of the appropriate colors. The development involves no differential treatment of the three layers, and for this reason the processing is very much simpler than that of previously available three-layer color picture films. The availability of such a film is expected to increase the present strong tendency toward producing a greater proportion of pictures in color. Since none of the dyes effectively absorbs infrared light, to which the present almost universally used cesium tubes are extremely sensitive, sound tracks on color films have, up to the present, been produced in developed silver which is opaque to all kinds of light. In an attempt to avoid a different processing of sound track and picture, manufacturers are interested in a phototube of very high sensitivity to blue light, but no general adoption of such blue-sensitive tubes has yet taken place.

Films having finer grain than those generally used for release prints several years ago, have come into practically universal use for black-and-white pictures with resulting improvement in picture and sound quality. Fine-grain films of adequate speed have also become available for sound recording purposes, and these too have been widely adopted.

For production of 16mm sound tracks, optical reduction printing from 35mm tracks is capable, with satisfactory equipment, of affording the process which gives the best quality in resolution and sound. However, scarcity of optical reduction sound printers, especially printers with the necessary refinement, has retarded the commercial application of this method.

In practically all recording and reproducing equipment mechanical filters are employed to provide constant speed at the sound recording or reproducing point. A recent tendency is toward a simpler damping system in which the film passes over a movable roller connected to a dash pot. This principle has been applied both to recorders and projectors.

A system of recording magnetically on a strip of flexible material coated with a layer of powdered high-retentivity magnetic material in a plastic carrier or binder, has attracted much attention, since it evidently constitutes a high quality sound recording. Although there is no expectation that such magnetic recording will supplant present photographic tracks on release films, it may find an important place in the motion picture industry for initial recording. Duplication must be accomplished by a re-recording operation. Thus far there has been no commercial application of this system in the motion picture industry.

A camera or a television pickup device, known as the *image orthicon* has recently become an extremely important factor in television transmission. Systems have also been developed which make it possible to transfer a televised image to motion picture film. The image orthicon can transmit a practically satisfactory picture where illumination levels are of the order of one per cent of what is required for a motion picture camera using high-speed panchromatic film. Therefore, the combination of an orthicon with the necessary equipment to transfer the televised image to film is of importance in all conditions where the available light is too low for direct photography.

The practice of reducing reflections by coating the surfaces of the lenses has been almost universal for cameras, projectors, and sound optical systems.

NAVAL ARCHITECTURE AND MARINE ENGINEERING

By Erwin E. Martinsky

Technical Division, United States Maritime Commission

GENERAL

The shipping industry both in the operating and construction fields has entered into the period of uncertainty and readjustment incident to returning to peacetime pursuits. The war not only broke the continuity of orderly development of merchant ships into efficient engineering servants of the public, but changed somewhat the conditions which dictate such development and change.

The phenomenal expansion of heavier than air craft in size, speed, and carrying capacity will have an effect on the future of passenger-carrying ocean vessels, which as yet can not be accurately forecast. It has required a re-examination of the factors governing passenger ship design in respect to size, speed, and classes of services, which would find a ready acceptability and attract in sufficient numbers the traveling public.

The policies of the Administration which may be in control in the United States also will have their effect on the development of the U. S. Merchant Marine in direct relation to the tension on the purse strings cutting off or releasing funds for construction and operating subsidies.

The economic aspect of ship operation is most severely affected by the upward swing of wages for ship personnel and longshoremen. The trend from the labor side is to increase the number of crew required and at the same time to increase the wages per man and reduce the hours worked per day. Also the changes in quarters in respect to size and location are tending to reduce the space which might be used to obtain revenue. The cost of handling cargo on and off at dockside is also appreciably higher than pre-war levels. Whether or not these increases can be absorbed by increased efficiency in operation within the subsidy limits which Congress may set is still to be determined. Unless this result can be achieved, it is hard to visualize a privately owned and operated American Merchant Marine of the future.

The foreign maritime countries are also being subjected to increased costs of construction and operation, owing primarily to increased labor costs. However, these nations have all assumed very firm and active policies favoring the most rapid rehabilitation of their respective merchant fleets and full restoration of their foreign trade. A firm policy on the part of the United States will also be required if an adequate post-war American Merchant Marine is to be a reality.

SHIPYARD PRODUCTION

The production records of the American shipyards for 1946 indicate a very rapid slowing down as the year progressed to an estimated rate required for post-war building to keep the merchant fleet at reasonable efficiency. The present urgent necessity to establish early service on essential trade routes with vessels of most modern design has dictated the policy to convert the standard C type vessels from war to peacetime service. This has directly affected the number of contracts let for new construction.

Through October 1946, there were completed in American shipyards 71 vessels over 2,000 gross tons each, totaling 558,000 gross tons. In respect to types, they may be broken down into six passenger-cargo vessels for the Grace Line; one refrigerator vessel for the United Fruit Company; 18, C2 cargo; 16, C3 cargo; seven C4 cargo; three C1 lumber carriers; seven cargo vessels for the Netherlands Government; two cargo vessels for the French Government; two cable ships; five tankers and one coastal tanker. Turbine propulsion was installed on 63 vessels (570,100 H.P.) steam reciprocating on two (8,680 H.P.), and Diesel in six vessels (12,000 H.P.).

There are under contract or under construction in American shipyards as of Oct. 31, 1946, 303 vessels of all types, totaling 506,000 gross tons. These include as major vessels 43 cargo, 12 cargo-refrigerator, 11 passenger-cargo, and five tankers, totaling 70 vessels of 476,000 gross tons. The remaining vessels are of miscellaneous types for restricted services and include 114 non-propelled vessels of 67,000 gross tons. Turbine propulsion is provided for 59 of the major type vessels; two of the passenger-cargo will have turbo-electric drive and nine cargo vessels Diesel powered. The 119 miscellaneous types of propelled craft consist of one steam reciprocating, 113 Diesel, and five Diesel electric installations.

Comprehensive data on foreign shipbuilding are not at hand, but in general terms it would appear that to Oct. 1, 1946, 1,000 vessels of over 1,000 gross tons each are on order or under construction, totaling about 5,500,000 gross tons.

Diesel propulsion predominates three-to-one on vessels building on the Continent. Reports indicate that in Great Britain and Northern Ireland there are somewhat more Diesel powered vessels being built than steam. This is unusual and may be explained in part by the fact that many of the vessels being built are for continental accounts.

CONVERSIONS

An extensive program of reconversion of the C type and other vessels to peacetime service was started during the year. Effort is being made to complete the vessels as nearly to the actual needs of the operators as dictated by the trades in which they are to engage.

The best known of these conversions is that of the *S.S. America,* which served in the war as a troop transport under the name of the *U.S.S. West Point.* In effecting this conversion it was possible to restore the vessel to its former condition as the queen of the U. S. Merchant Marine, except for the readjustment of accommodations to provide for additional crew, thus reducing the passenger-carrying capacity approximately 150. The fresh water evaporating plant installed in this vessel by the Navy has been left in, and has made it unnecessary to carry fresh water except for drinking and standby uses.

The three vessels of the Good Neighbor fleet, *S.S. Argentine, Brazil* and *Uruguay* are in process, or soon will be, of being refitted and reconditioned for post-war use. In making these conversions, simple and modern decorative schemes were employed, making the vessels attractively livable, and at the same time keeping the costs within reasonable bounds. Passenger-carrying vessels being in greatest demand at present, every effort is being made to recondition all such vessels as economic considerations will warrant.

The cargo fleet is also being given full attention by reconverting the C type vessels to merchant service. Many of the conversions are quite extensive and expensive, especially in the case of those vessels built for transport attack and cargo attack use for the Navy. Much structure has to be altered, quarters revamped, cargo handling gear fitted, lighting and power circuits changed, etc., as well as a general overhauling of the entire machinery installations and reconditioning of the hull.

It is expected that by the end of 1946, five C3, eleven C2 and one former passenger-carrying vessels will have been converted. There are under way or planned 106 additional conversions which are expected to be completed in 1947. Many conversions are being made by private operators of their passenger-carrying vessels.

RESERVE FLEET

At the end of October 1946, a total of 1,733 vessels were in the various reserve fleet anchorages, consisting of 34 different designs. The lay-up process is designed to be as simple and economical as possible, compatible with proper preservation of the ships' hulls, machinery, and appurtenances. Steel surfaces inside and out will be sprayed with oil which has special rust-removing qualities. Later a second coat containing paint will be given, which will form a pliable skin with soft oil next to the steel. It is estimated that this treatment will be effective for about three years. Machinery and boilers, etc. will be flushed through with preservation oil on the steam side. Pumps and piping on water side will be greased. Sea cocks and overboard discharges will be drained and greased, packed to prevent freeze damage and to protect against corrosion. Engines will be opened, drained, greased, and the packing removed. Cargo rigs will be stowed below decks, and all movable equipment stripped from the ship and warehoused, or if in short supply, will be allocated to ships in operation. Electrical equipment will be protected against water entering from outside sources. Wiring in exposed locations will receive a coat of moisture-repellent varnish. The experience gained in the effectiveness of preservation methods used on the laid-up fleets after the First World

War is being used to the fullest extent.

PROPELLING MACHINERY

The principal characteristics of the main propulsion drives on large vessels showed no major changes during the year. The vessels built by American yards were in respect to machinery substantially duplicating types built previously. Several Diesel installations on small cargo vessels conformed to conventional methods.

An experimental installation of a 6,000 S.H.P. Nordberg trunked piston Diesel engine was made in the Victory type ship, *M.S. Emory Victory*. The ship is equipped with a nine-cylinder 29″ x 40″ main engine rated at 6,000 S.H.P. at 160 R.P.M. and two five cylinder Nordberg auxiliary engines 18″ x 25″, each of which drives a generator of 800 K.W. capacity. The Scavenger air for the main engines is supplied by motor centrifugal blowers, which accounts for the relatively high generator capacity required. From public reports, the logs of three voyages indicate that, in a total of approximately 21,000 miles traveled, the main engines operated 1,500 hours, with an average consumption of lubricating oil of 24 gallons per day and an average observed miles per barrel of fuel oil of 2.26 (Main and Auxiliary Engines). While these results may be considered to indicate good all-around performance, a longer service period should elapse before any final judgment may be given as to the merits of the installation.

Owing to delays caused by strikes and other causes, the experimental gas turbine installation in a Liberty type collier has not been completed. Nothing has developed in regard to the gas turbine field during the year which would cause any change in the optimistic predictions of performance for the 3,000 S.H.P. unit involved.

The Navy Department is also carrying on an experimental gas turbine test at the U. S. Navy Experimental Station, Annapolis. Data are being taken at progressively increased temperatures to determine efficiency of operation and the behavior of metals at high speeds and temperatures. Much valuable information has been gathered, and when correlated and studied should reveal the most efficient methods of designing and constructing units for marine and other uses.

The Navy has concluded an interesting experimental installation and series of tests of the Kirsten Cycloidal propeller on a 900-ton LSM type vessel. Complete results of the tests are not available but it is understood that they have been quite successful in respect to maneuverability, absence of vibration, and satisfactory operating efficiency. The installation consisted of twin rotors equipped with six vertical blades, each of which revolves on its own axis as the rotor revolves. The orbit diameter of the propeller is seven feet, and the rotor is driven through a specially designed spiral bevel gear unit. The pinion shaft is directly connected to the engine shaft by a flexible coupling.

Steering is accomplished by a control gear which directs the propeller thrust outward from the propeller shaft without altering the direction of rotation of the rotor. Reversing is accomplished by turning the control 180°, thus eliminating the necessity of a reversing gear and the need for rudders. Full sidewise motion was obtained without forward motion; also, a complete circle was turned with the bow as the pivot and without any forward motion. It will be interesting to follow the future development of this form of drive.

ALUMINUM ALLOY STRUCTURE

Aluminum alloy as a material of construction for superstructure on passenger vessels has been incorporated into several designs during the year. The Mississippi Shipping Company has three passenger-cargo ships building on which will be included a so-called aluminum stack house, housing a false stack, and two decks for officers' quarters, radio room, etc. Aluminum lifeboat and gear are also fitted, with the net result that the vessel's stability characteristics will be benefited by the reduction in topside weights. The vessel design is based on the standard C3 lines and propulsion.

The Alcoa passenger-cargo ships building at Kaiser yards have the two upper decks, lifeboats, and gear made of aluminum alloy. These vessels are based on the Victory type hull and machinery. As in the case of the vessels building for the Mississippi Shipping Company, the main benefit of the installation is in respect to stability characteristics and some saving in weight.

The projected design, P3-S2-DA1, under preparation by the Maritime Commission, has extensive superstructures of which the two uppermost tiers are of aluminum alloy. The saving in topside weight is so considerable that it is possible to obtain satisfactory stability to meet the Commission's high standards with a beam of from 4 or 5 feet less than if steel had been used. In turn this reduction in the vessel's beam has resulted in a saving of hull steel so that, from the standpoint of cost, the added expense of the aluminum will be largely if not all written off.

This direct effect of saving in topside weights by use of aluminum has far-reaching effects on the basic design of hulls having extensive superstructures. The hull lines are affected by the change in beam resulting in a form which requires less power to drive at the higher speeds. The introduction of adequate liquid ballast over the operating range of drafts usually required to obtain suitable stability should be easy of attainment, making for simpler operation.

CARGO HANDLING AND PRESERVATION

The program for the development of overhead gantry type cranes for cargo-handling on board ship is still in the experimental stage. Owing to the difficulty of obtaining certain materials which have been in short supply, the tests of the final rig developed from earlier experimentation have not been completed. The installation of this type of gear as the cargo-handling gear for ships in service will have to wait on the completion of tests and the final assessment of the advantages and disadvantages of the system.

There is in process of design a six-hold cargo vessel specially arranged for the expeditious handling of cargo. The conventional burtoning system will be used in conjunction with twin hatches fitted in all but the extreme forward and aft holds. This arrangement makes it possible to land the cargo from the hook at the place it is to be stowed. The slow and difficult task of filling the wing sections which the single hatch type of ship necessitates will thus be eliminated in a large measure, and the handling of cargo expedited.

The use of dehumidifying equipment for the protection of cargo against sweating and moisture damage is becoming more and more the accepted practice. This is especially so in the trade routes which encounter wide variations in temperature and humidity conditions and consequently would be subjected to the greatest hazard in respect to sweating.

CONSTRUCTION TRENDS

The United States ship construction program for 1947 has been subject to change from time to time because of changes in budgetary policies of the Government, and can not at this time be considered as final. This is especially true in respect to the construction of large passenger liners, which are needed for the proper restoration and maintenance of service in the essential trade routes.

The conversion of ships from war to merchant uses is proceeding rapidly and should be practically completed in 1947. The conversions in respect to passenger-carrying vessels are along functional rather than luxurious lines. Joiner work that has to be replaced in general will be of incombustible materials to meet new ship specifications.

The passenger-cargo ships constructed in 1946 and under contract for 1947 are fitted with relatively low numbers of berths. The vessels building for the Grace Line are fitted for 52 passengers; those for the Mississippi Shipping Company, 120 passengers; for Alcoa, 98 passengers. There is only one-class service on these vessels, which is first class. The cabins are roomy, and the public rooms though modern in styling are luxurious. Air conditioning is used extensively in both passenger and crew accommodations and public spaces, the trade route on which the vessel is to be used determining what spaces need such treatment.

The projected designs for the large passenger liners and those vessels now in operation call for three classes of accommodations, *viz.*, first, cabin, and tourist. It is believed that the new vessels will tend toward supplying the traveler with greater conveniences coupled with modest interior treatments affording accommodations and service equal to good hotels ashore.

The trend in speed is ever upward for all types of vessels. This is dictated in part in passenger vessels by the competition of air travel. It is dictated in all types of vessels by military lessons learned during the war. With modern submarines capable of 25 knots on the surface it is imperative that the speed of merchant ships be stepped up, especially those types which are potential naval auxiliaries. Finer hull lines will result in order to keep power requirements at a minimum.

The external appearance of passenger ships is tending toward stream lines with low stacks and superstructure effects. The low stack is undesirable from a utility standpoint as smoke, soot and gases may find their way on to decks and into open windows, under certain wind conditions. One solution of this problem, incorporated in the Mississippi Shipping Company new passenger-cargo vessels, was the use of kingposts for the escape of smoke, etc. The usual centerline smoke stack is a dummy stack, abbreviated in height, blending in with the sleek appearance of the superstructure.

Steam conditions are in general going to higher pressures and temperatures, the materials of construction determining the upper limits for both. The gains in efficiency obtained by use of high temperatures and pressures have resulted in lowering the number of boilers required and reducing the space requirements for machinery.

United States laws and regulations require fireproof construction using incombustible bulkheading, ceilings, and paneling. There is no comparable requirement of foreign nations. It would appear that there is a definite trend in foreign ships to use combustible materials in lieu of wood paneling for some applications.

Many installations of radar and Loran have been made on American ships. Both of these electronic devices are developments of the war. Radar is useful in detecting the proximity of other vessels, or any solid object under conditions of poor visibility. Loran, an abbreviation for Long Range Navigation in conjunction with shore stations, enables a vessel accurately to obtain a fix under any weather or visibility conditions. A sharp reduction in collisions and stranding should be the result of the use of these equipments, making for still safer navigation by sea.

PERIODICAL PUBLICATIONS

Aeronautical Engineering Review
2 East 64th St., New York, N. Y.

Civil Engineering
29 West 39th Street, New York, N. Y.

Construction Methods
330 West 42nd Street, New York, N. Y.

Contractors and Engineers Monthly
470 Fourth Ave., New York, N. Y.

Diesel Power
192 Lexington Ave., New York, N. Y.
Electrical Communication
67 Broad Street, New York, N. Y.
Electrical Engineering
29 West 39th St., New York, N. Y.
Electrical World
330 West 42nd St., New York, N. Y.
Electronics
330 West 42nd St., New York, N. Y.
Engineering and Mining Journal
330 West 42nd St., New York, N. Y.
Engineering News Record
330 West 42nd St., New York, N. Y.
General Electric Review
General Electric Company, Schenectady, N. Y.
Heating, Piping and Air Conditioning
6 N. Michigan Ave., Chicago, Ill.
Journal of Engineering Education
University of Pittsburgh, Pittsburgh, Pa.
Mechanical Engineering
29 West 39th St., New York, N. Y.
Metal Progress
7301 Euclid Ave., Cleveland, Ohio.
Mining and Metallurgy
29 West 39th St., New York, N. Y.
Modern Plastics
122 East 42nd Street, New York, N. Y.
Motor
572 Madison Ave., New York, N. Y.
Motor Age
100 East 42nd St., New York, N. Y.
Power
330 West 42nd St., New York, N. Y.
Power Plant Engineering
53 West Jackson Blvd., Chicago, Ill.
Professional Engineer
8 Michigan Ave., Chicago, Ill.
Radio-Television Journal
1270 Avenue of the Americas, New York, N. Y.
Railway Mechanical Engineer
30 Church St., New York, N. Y.
Refrigerating Engineering
40 West 40th St., New York, N. Y.
S.A.E. Journal (Journal of the Society of Automotive Engineers)
29 West 39th St., New York, N. Y.
Southern Power and Industry
1020 Grant Bldg., Atlanta, Ga.
Technical Engineering News
Massachusetts Institute of Technology, Cambridge, Mass.
Technology Review
Massachusetts Institute of Technology, Cambridge, Mass.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

Allied Building Metal Industries, 101 Park Ave., New York, N. Y.
American Ceramic Society, 2525 N. High St., Columbus, Ohio.
American Concrete Institute, 408 New Center Building, Detroit, Mich.
American Construction Council, 154 Nassau Street, New York, N. Y.
American Foundrymen's Assn., 222 W. Adams St., Chicago, Ill.
American Institute of Chemical Engineers, 50 E. 41st St., New York, N. Y.
American Institute of Consulting Engineers, 75 West St., New York, N. Y.
American Institute of Electrical Engineers, 29 West 39th St., New York, N. Y.
American Institute of Mining and Metallurgical Engineers, 29 West 39th Street, New York, N. Y.
American Institute of Physics, 57 East 55th St., New York, N. Y.
American Iron and Steel Institute, 350 Fifth Ave., New York, N. Y.
American Mathematical Society, 531 West 116th St., New York, N. Y.
American Petroleum Institute, 50 West 50th St., New York, N. Y.
American Public Works Assn., 1313 East 60th St., Chicago, Ill.
American Radio Relay League, 38 La Salle Road, West Hartford, Conn.

XIX. ENGINEERING AND CONSTRUCTION

AMERICAN RAILWAY ENGINEERS ASSN., 59 E. Van Buren St., Chicago, Ill.

AMERICAN ROAD BUILDINGS ASSN., 1319 F. St., N.W., Washington, D. C.

AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS, St. Joseph, Mich.

AMERICAN SOCIETY OF CIVIL ENGINEERS, 29 West 39th St., New York, N. Y.

AMERICAN SOCIETY FOR ENGINEERING EDUCATION, University of Pittsburgh, Pittsburgh, Pa.

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS, 51 Madison Ave., New York, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, THE, 29 West 39th St., New York, N. Y.

AMERICAN SOCIETY FOR METALS, 7301 Euclid Ave., Cleveland, Ohio.

AMERICAN SOCIETY OF NAVAL ENGINEERS, Navy Building, Constitution Ave., N.W., Washington, D. C.

AMERICAN SOCIETY OF REFRIGERATING ENGINEERS, 40 West 40th Street, New York, N. Y.

AMERICAN SOCIETY OF SAFETY ENGINEERS, 60 East 42nd St., New York, N. Y.

AMERICAN SOCIETY FOR TESTING MATERIALS, 1916 Race St., Philadelphia 3, Pa.

AMERICAN SOCIETY OF TOOL ENGINEERS, 2567 West Grand Boulevard, Detroit, Mich.

AMERICAN STANDARDS ASSN., 70 East 45th St., New York, N. Y.

AMERICAN STATISTICAL ASSN., 1603 K St., N.W., Washington, D. C.

AMERICAN WATER WORKS ASSN., 500 Fifth Ave., New York, N. Y.

AMERICAN WELDING SOCIETY, 29 West 39th St., New York, N. Y.

ENGINEERING FOUNDATION, THE, 29 West 39th Street, New York, N. Y.

ENGINEERS COUNCIL FOR PROFESSIONAL DEVELOPMENT, 29 West 39th Street, New York, N. Y.

HIGHWAY RESEARCH BOARD, NATIONAL RESEARCH COUNCIL, 2101 Constitution Ave., N.W., Washington, D. C.

ILLUMINATING ENGINEERING SOCIETY, 51 Madison Ave., New York, N. Y.

INSTITUTE OF THE AERONAUTICAL SCIENCES, INC., 2 E. 64th St., New York, N. Y.

INSTITUTE OF RADIO ENGINEERS, INC., 330 W. 42nd St., New York, N. Y.

NATIONAL AERONAUTIC ASSN. OF U.S.A., INC., 1025 Connecticut Ave., Washington, D. C.

NATIONAL BOARD OF FIRE UNDERWRITERS, 85 John Street, New York, N. Y.

NATIONAL FIRE PROTECTION ASSN., 60 Batterymarch St., Boston, Mass.

NATIONAL RESEARCH COUNCIL, 2101 Constitution Ave., Washington, D. C.

NEW YORK ELECTRICAL SOCIETY, 29 West 39th Street, New York, N. Y.

RADIO CLUB OF AMERICA, 11 W. 42nd St., New York, N. Y.

SOCIETY OF AUTOMOTIVE ENGINEERS, INC., 29 W. 39th St., New York, N. Y.

SOCIETY OF EXPERIMENTAL STRESS ANALYSTS, Massachusetts Institute of Technology, Cambridge, Mass.

SOCIETY OF MOTION PICTURE ENGINEERS, INC., THE, Hotel Pennsylvania, New York, N. Y.

SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS, 29 W. 39th St., New York, N. Y.

SOCIETY FOR THE PLASTICS INDUSTRY, 295 Madison Ave., New York, N. Y.

WESTERN SOCIETY OF ENGINEERS, 231 S. La Salle St., Chicago, Ill.

DIVISION XX

GEOPHYSICAL SCIENCES

EARTHQUAKES AND VOLCANOES

By Frank Neumann
U. S. Coast and Geodetic Survey

GENERAL

Although nearly 3,000 persons were reported killed by earthquakes in 1946, this number was far below the average of 14,000 estimated from historical records. The greatest seismic seawave to strike the Hawaiian Islands since 1868, and the offshore Dominican Republic earthquake which was one of the five greatest recorded on instruments since 1900, were the two outstanding events.

Volcanic activity was moderate but widespread with only a few cases of serious destruction. Research in seismology and vulcanology gradually tended toward a peacetime pattern although international cooperation was still seriously impaired. Seismological principles and methods found continued application in national defense problems.

EARTHQUAKES IN FOREIGN AREAS

Disastrous earthquakes occurred in eastern Turkey, Algeria, Dominican Republic, Russia, Japan, and Peru. On Feb. 14, 276 persons were killed near Constantine in the mountains of northeastern Algeria. An earthquake in eastern Turkey on May 31 killed 1,300 persons in the community of Karliova. Many villages were practically destroyed because of the collapse of clay and mud walls which supported heavy tile roofs. On Aug. 4, one of the most violent earthquakes of the last decade struck a short distance off the northeastern coast of Santo Domingo. Nearly 100 persons died in a seismic seawave which swept the Scotch Bay area; several churches in the interior were destroyed, and many smaller buildings collapsed. On Nov. 3, Uzbek Province and the Dzhalah Abad region east of Samarkand, suffered widespread casualties and destruction. Relief was rushed by the central government. A violent earthquake in northern Peru on Nov. 10 killed 800 persons. Thirty per cent of the structures in the central area were damaged. On December 21 a violent seaquake and seismic sea wave off the Island of Shikoku, Japan, killed 1,500 persons and destroyed nearly 2,000 homes.

The less important earthquakes of the year included one in Switzerland on January 25 when communication lines were disrupted and hundreds of churches and homes were damaged in the Canton of Valais; a presumably submarine earthquake near New Britain on May 5 which damaged roads in the Rabaul area; a violent shock at Port-de-France, Martinique on May 21 which damaged numerous church steeples; and a series of earthquakes in Iraq on Aug. 22 which leveled the village of Penjwin.

EARTHQUAKES IN THE UNITED STATES AND POSSESSIONS

The strongest shocks of the year occurred in the Puget Sound area and southern California. On Feb. 15, an earthquake centering west of Tacoma, Wash. caused some structural damage in the Seattle, Tacoma, and Olympia areas, the total damage being estimated at $250,000. On June 23, the same area was again shaken by an earthquake originating in Georgia Strait, British Columbia, which caused much damage along the northeastern shore of Vancouver Island. The bottom of Deep Bay dropped a maximum of 84 feet, roads were badly broken, and scores of chimneys fell. Bridges near Vancouver and Seattle were damaged.

A strong shock on March 15 in southern California caused rolling boulders to damage the Los Angeles aqueduct severely.

In outlying territories, one of the most important earthquakes of the year occurred on April 1 when a seaquake originating in the Aleutian Trench, Alaska, sent the greatest seismic seawave in many decades across most of the Pacific Ocean. The lighthouse at Scotch Cap near the epicenter was washed away, killing five men. In the Hawaiian Islands a 20-foot wave struck Hilo where most of the $20,000,000 damage in the Islands occurred; 173 persons were killed and 291 injured.

SEISMOLOGICAL STATIONS AND INSTRUMENTS

Modern seismographs were installed at Loyola University, New Orleans, and at Regis College, Denver; and a Keller type of visible electronic recorder was installed in the Commerce Building, Washington, D. C. Development of two new types of electronic seismographs was well advanced. In the United States 45 seismographs for locating earthquakes, and 50 special seismographs for measuring destructive ground motions were maintained in operation.

A history of the Manila seismological station which was destroyed during the Japanese invasion was published. In South America, new stations were being established at Punta Arenas and Panimavida, Chile, and at Manizalles, Colombia; and in Europe many stations resumed operation. Close cooperation is maintained between seismological stations the world over.

SEISMOLOGICAL INVESTIGATIONS

St. Louis University seismologists found that earthquakes in the central Mississippi valley and Ozark areas were related to the Ozark uplift and to known fault systems. At the California Institute of Technology, the investigation of earthquake magnitudes as measured from instrumental records was extended to include deep focus shocks. The number of large earthquakes was found to fall off rapidly with increasing depth. The Dominion Observatory at Ottawa, Canada published a descriptive report on the earthquake hazard in eastern Canada and made a field investigation of the destructive British Columbia earthquake of June 23.

Harvard University reported that an apparent discrepancy between seismic wave speeds resulting from earthquakes and from blasting operations could be explained by personal factors of interpretation. This is important in locating earthquakes from instrumental data.

The U. S. Navy expanded its microseismic-meteorological project as a result of the success obtained in detecting and tracking hurricanes during two seasons. It was found that microseisms due to hurricanes, cold fronts, thunder storms, high wind, and fair weather, have certain individual characteristics. The U. S. Coast and Geodetic Survey found correlations between microseisms and low-pressure areas in extra-tropical regions. In a broadcast on Jan. 13, 1946 Rev. Dr. James B. Macelwane, S. J., president of the Jesuit Seismological Association, again emphasized the futility of attempting to predict destructive earthquakes.

In vulcanology an exhaustive report was released on temperature and other studies made at Paricutin volcano by the Geophysical Laboratory of the Carnegie Institution of Washington. A basaltic lava was indicated.

VIBRATION RESEARCH

Seismological instruments and principles were increasingly employed in engineering and other research involving vibration measurements. Seismographs designed by the University of California were installed on the Golden Gate Bridge to study its vibration characteristics, and seismologists made vibration measurements on foundations for important Federal engineering projects.

The ground waves generated by atomic bomb experiments were recorded on sensitive seismographs at distant stations. Vibrations set up by controlled explosions of large quantities of unserviceable ammunition were measured on portable seismographs to obtain more data on deep geological structure and to gain further information on seismic wave propagation. The University of California completed a report on the ground and air waves resulting from the Port Chicago, Calif. ammunition blast of June 17, 1944 which was heard 250 miles away.

RELATED MEASUREMENTS

A chart was prepared by the U. S. Coast and Geodetic Survey showing the successive half-hour positions of the seismic seawave which spread across the Pacific Ocean from the Aleutian Islands earthquake on April 1, 1946. A tide gage in Puerto Rico recorded both ground and water waves resulting from the violent Dominican Republic earthquakes of Aug. 4 and 8. Important new evidence on the extent of ground displacements near earthquake faults was found in an analysis of a precise re-survey made immediately after the destructive earthquake near El Centro, Calif. in 1940.

SEISMOLOGICAL ORGANIZATIONS AND PUBLICATIONS

There were no significant changes in organizations and publications as compared with 1945 except that an anticipated increase in the volume of papers on peacetime subjects materialized. The epicenters of nearly 50 important earthquakes in all parts of the world were made immediately available to scientists and the public through a cooperative program between Science Service, the Jesuit Seismological Association, and the U. S. Coast and Geodetic Survey. After the destructive seismic seawave of April 1 a number of government agencies planned to establish an effective warning program.

The program of the State Department and the U. S. Coast and Geodetic Survey to effect more active cooperation in seismology in the Western Hemisphere was instrumented by again sending a seismologist to visit most of the seismically active countries. Seismologists of the U. S. Coast and Geodetic Survey and Fordham University visited the Dominican Republic, on invitation, to participate in the investigation of the destructive earthquake of Aug. 4. The University of Santo Domingo was advancing plans to establish a first-class seismological station when the earthquake occurred.

In Washington, D. C., the National Research Council sponsored a Pacific Science Conference to formulate plans for expanding scientific research, including seismological investigations, in the Pacific area.

VOLCANOES

Volcanic activity continued in many parts of the world although no eruptions of outstanding importance occurred. The most destructive eruption began about March 20 when Mount Sakura-Jima, across the Bay from Kagoshima in southern Japan, blew great boulders more than 1,000 feet into the air and sent up a smoke column 3,000 feet high. Lava flows 20 to 30 meters deep doomed nearby villages. In San Salvador, Izalco erupted on May 11 after 12 years of quiescence. In June, the crater of Santiago volcano in Nicaragua was again emitting fumes which menaced nearby coffee crops.

In the Tonga Islands, a volcano on Niuafoou was in violent eruption on Feb. 17, 1946, and a lava flow partly covered a village. On Sept. 25, Messina, Italy, reported Stromboli again active. On Kamchatka Peninsula, Kluchenskayo, active since December 1944, became increasingly active late in October. In February, a volcano in Baluchistan, north of Karachi, India, was reported emitting mud instead of steam and ash; and in the Pacific Ocean 200 miles south of Yokosuka Naval Base, a volcanic island rose from the sea in February emitting steam and sulphur visible for miles.

In New Zealand, Mount Ruapehu, which became active in August 1945, continued to shower volcanic dust over a wide radius. Paricutin volcano in Mexico was intermittently active early in 1946 but there was an overall subsidence during the year.

Volcanic ash reported by ships over the Aleutian Trench in May 1945 was later discovered to be due to a spectacular eruption on Umnak Island which blew steam and ash several thousand feet into the air.

MINERALOGY AND PETROGRAPHY

By Clifford Frondel

Department of Mineralogy, Harvard University

SYMPOSIUM ON THE SYNTHESIS OF SINGLE-CRYSTALS

Although most solid materials are crystalline, they are ordinarily composed of multitudes of minute, randomly oriented crystal grains, much as lump sugar, and the properties of the aggregate differ in certain significant respects from those of the individual grains. For certain industrial and scientific applications, however, it is essential to employ single crystals. The principal demand has come from the electronics industry, where piezoelectric single-crystals are used as frequency controlling elements in radio, in telephony, phonograph pick-ups and a variety of other devices. Additional uses include lenses and prisms for optical instruments, electro-optical devices, wire-drawing dies, cutting tools, and bearings for watches and other instruments. Single-crystals of substances transparent to infra-red radiation also were employed during the war in detection devices and have varied peacetime applications.

The procurement of crystals for these applications presents numerous difficulties. Many of the substances do not occur in nature, or if they do, are not found in pieces of sufficient size or quality. The difficulties encountered in obtaining an adequate supply of natural quartz crystals for radio applications have been mentioned in preceding issues of The American Year Book. During 1946, both the Army and Navy entered into extensive research programs directed toward both the development of methods for growing crystals artificially and the discovery of new crystalline substances of superior properties. This work is being carried on both in government laboratories and under development contracts awarded to research laboratories in industry and universities. Particular emphasis has been placed on the development of methods for growing quartz by artificial means and on a search for substitutes for quartz for piezoelectric applications. It is interesting to note that, late in the war, the Germans developed a near-practical procedure for the synthesis of quartz.

A symposium of 14 papers summarizing recent work in the general field of synthetic single-crystals was held by the American Association for the Advancement of Science during the annual meeting of the society. Among the contributors were representatives of the Naval Research Laboratories, Bell Telephone Laboratories, Brush Development Co., Harshaw Chemical Co., and various private and university laboratories holding development contracts with the U. S. Signal Corps. The methods of synthesizing quartz and possible substitutes for quartz, such as nepheline and aluminum metaphosphate, were described in detail. The preparation of crystals of these substances presents many difficulties, since they must be made at high temperatures either from fusion or from hydrothermal systems in closed steel pressure bombs. Much more attention is at present being given to various water-soluble salts, which can be synthesized as single-crystals under ordinary laboratory conditions. Among such substances may be mentioned ADP (ammonium dihydrogen phosphate), which was made in mass production during the war. The water-soluble salts in general are mechanically weak and, though they may have a relatively high piezoelectric response, are inferior to natural crystals in this respect. Another wartime development in the field of crystal synthesis was the construction and operation of a plant for the manufacture of synthetic corundum (sapphire) crystals for use as bearings. This broke the dependency of the United States on the long established Swiss and French sources of supply.

INDUSTRIAL DIAMONDS

During the war years the consumption of industrial diamonds in the United States rose to a new peak, owing largely to the demands of the munitions industry for abrading and cutting tools and wire-drawing dies. During 1945, approximately 9,000,000 carats of industrial diamond (bort) were used in the manufacture of diamond impregnated grinding wheels and saws alone. Tools of this type were in special demand for sawing and grinding quartz in the manufacture of oscillator-plates for radio control (The American Year Book, p. 804, 1945). The consumption of industrial grades of diamond during recent years has remained considerably greater than the production. The total production in 1944 amounted to 11,500,000 carats, of which about 4/5 was of industrial grade and the remainder of gem quality.

The increased utilization of diamond and the scarcity of suitable material has greatly stimulated research and development work directed toward improving the design and efficiency of diamond tools. A symposium of papers detailing the advances in the technology of diamond tools was recently published (*Amer. Mineralogist,* vol. 31, p. 135, 1946). Most of the research has been essentially of a crystallographic nature. This is occasioned by the fact that many of the applications of diamond in industry require the use of single-crystals rather than of aggregates. Since the properties of diamond, such as the hardness, vary with direction in the crystal, the proper and most economical use of the stone requires a knowledge of its structural properties and symmetry. Thus, the efficiency of a diamond single-crystal used as a cutting edge may vary over 100-fold according to the orientation of the stone relative to the surface being cut. Detailed investigations of this problem were carried on in several university and industrial laboratories and contributed greatly to an understanding of the proper design of diamond tools. Important researches also were contributed by the National Bureau of Standards and others on the problem of drilling holes in diamond crystals for use as wire-drawing dies. The high voltage arc and electrolytic methods of drilling as at present developed have reduced both production time and cost. Holes equal or superior to those drilled mechanically have been obtained by these methods down to diameters of less than 0.0005 inch. The earlier method comprised drilling with a thin drill stem using diamond powder as abrasive and did not easily afford dies of desired contour and diameter. The high voltage arc method also has applications to the facetting and sawing of diamond crystals for use as gem stones.

CLAY MINERALS

A monographic study has been made of the montmorillonite group of clay minerals, one of the most widely occurring of all mineral materials (*U. S. Geol. Survey Prof. Paper 205B,* 1945). Clays are the end products of weathering of a wide variety of rocks and play a fundamental part in the physical and chemical properties of soils and soil fertility. They also constitute the most abundant raw material of the ceramics industry, and as the principal constituent of shales and other poorly consolidated rocks they are an important factor in a wide variety of engineering problems. Our present knowledge of the clay minerals is largely a consequence of the advent of new and powerful research tools suited to the examination of extremely fine-grained mixtures. The electron microscope, x-ray diffraction techniques, the differential thermal analyzer, and the petrographic microscope all have been brought to attack on the problem. The utility of these methods rests in the fact that they are able to resolve the properties of the individual constituents of the clay rocks and supplement the older chemical and physical methods of investigation which yielded information largely restricted to characteristics of the clay rock as a whole.

The crystal structure of montmorillonite is found to be of the so-called layer type, of which muscovite mica and kaolinite are examples. The silicon and aluminum atoms have tetrahedral coordination in respect to oxygen. Iron, alkaline earths, alkalies, chromium, and some other atoms have octahedral coordination, the crystal structure as a whole consisting of indefinitely extending silicate sheets or layers. The bonding forces between adjacent sheets are relatively weak. Exchangeable cations, usually sodium and calcium, are on the surfaces of the silicate layers and give rise to the base exchange phenomena for which these minerals are noted. This property is found to play a prominent part in determining the physical properties of minerals of the montmorillonite group, in particular their behavior toward water. The composition and mineral relations of the clay minerals are intimately related to the conditions under which they form. In general, alkalic feldspars and the micas tend to alter to the kaolin type of clay minerals, whereas minerals rich in iron and magnesium, the calcium-rich feldspars, and volcanic glasses commonly alter to members of the montmorillonite group. The montmorillonite minerals usually form as weathering products but may be formed at temperatures up to about 200°C in association with ore deposits.

DESCRIPTIVE MINERALOGY: NEW MINERALS

A restudy of the zinc-bearing clays by the U. S. Geological Survey has shown that they are not mixtures of kaolin and hemimorphite, as long considered, but are composed of a distinct mineral, for which the name *sauconite* is proposed. Sauconite is the zinc analogue of saponite, the magnesium member of the montmorillonite group. *Artinite,* a basic carbonate of magnesium, has been found at Luning, Nev., as a minor constituent of the brucite deposit there worked as a source of magnesium. Minor occurrences of this rare mineral also have been found recently in Vermont and Greenland. *Tinticite* is a new iron phosphate found in the Tintic mining district, Utah. Other new mineral species found recently include *zirfesite,* a zirconium silicate allied to allophane from the Kola Peninsula, USSR, and *franquenite,* an iron sulfate closely related to *slavikite.* A new hydrated oxide of manganese from Russia has been named *vernadite* after the distinguished Russian geochemist V. I. Vernadsky. *Christiansenite* is a new chemical variety of tridymite containing a considerable amount of sodium and aluminum in solid solution and representing an intermediate member of an isomorphous series towards nepheline.

The soda-rich member of the pyroxene group, *acmite,* has been found in quantity in the Cuyuna iron district, Minnesota. The mineral occurs disseminated in the matrix of the iron formation (taconite) and in local high temperature hydrothermal veins that cut the ore body. Study by optical and x-ray methods proves that *fuchsite* is a chromium-bearing variety of muscovite, in which a small amount of chromium substitutes for Al in the crystal structure. Another chromium-rich mica, *mariposite,* is probably to be classed as a variety of *phengite.*

TERRESTRIAL MAGNETISM AND ELECTRICITY

By H. D. Harradon
Department of Terrestrial Magnetism,
Carnegie Institution of Washington

GENERAL

In the course of the war, nearly all the scientific investigators and organizations had been called from peacetime research to participate in activities connected with the conduct of the war. In the United States the Government received great assistance from geophysicists who were able to take over the study of many problems the solution of which involved not only the application of the results of old methods of attacking theoretical and practical studies but also the initiation of new lines of research. The experience gained during this long interruption of normal programs of work has suggested the desirability of abandoning certain activities previously pursued in favor of new ones developed during the war. As a partial compensation, activities classified during the war have now been released for general study and information.

One of the obstacles to the progress of theoretical studies in geomagnetism has been the almost complete interruption of ocean magnetic observations and the great reduction in land-survey work. This unfortunate condition has been somewhat alleviated by the limited occupation of repeat stations, particularly by observers of the U. S. Coast and Geodetic Survey in Latin American countries, a large portion of the results of which were published during 1946.

GEOMAGNETIC RESEARCH

At the Department of Terrestrial Magnetism, Carnegie Institution of Washington, isoporic charts based on secular-change results obtained at about 2,000 stations have been compiled for epochs 1912.5, 1922.5, 1932.5, and 1942.5 for seven geomagnetic elements at ground level and for three of the elements throughout the atmosphere to an elevation of 5,000 km. Charts for the potential and vertical gradients for secular change at ground level were also prepared. Main-field isomagnetic world charts for declination, horizontal intensity, and vertical intensity based on results secured at about 10,000 stations since 1905, in 17 sections each, were completed for the epoch 1945.0. Charts in three sections for the northward, eastward, and total components of intensity and for inclination have also been constructed. In addition, a 17-section index-chart showing the positions of all declination-stations used in the construction of these charts was prepared.

Spherical harmonic analyses of the secular change charts at four epochs were completed. It is inferred that secular change is likely to originate chiefly in the mantle of the Earth below the crust in a region of high electrical conductivity. Spherical harmonic analyses have also been made of the main-field charts and of various geomagnetic variations.

Attention has been given to the problem of magnetic surveys from the air from which it is hoped that sufficient accuracy may be obtained to contribute to the scientific investigation of such problems in geomagnetism as the separation of the internal and external fields of the Earth and the solution of the question as to the existence of the so-called non-potential portion of the field. While aerial observations can not at present be expected to possess the precision of ground observations, the greater area that can be rapidly surveyed from the air will render the data more significant for analytical purposes than the present data obtained at the surface. Aerial observations may be made over regions inaccessible to the ground observer, particularly over the oceans and in polar regions. A better idea may be obtained of the magnetic field over regions where otherwise only a few land observations, which may not adequately represent the field, can be secured.

Isomagnetic charts based on surface observations must always be limited in the faithfulness of their depiction of the field, because of the impracticability of obtaining observations at an infinite number of stations and of deductions for both the regular and irregular changes of the field.

Investigations have been conducted to improve the reliability of predicting magnetic storms on the basis of their recurrence-tendencies employing the principle of multiple correlation, a method which was recently generalized by Wiener. Sufficient improvement in the results justify the application of the method.

The determination of the secular variation in past ages by the examination of sediments, interrupted by the war, is now being resumed. An expedition to Bradford and South Newbury, collected a new series of varves representing sedimentation during approximately 1,500 years. It is the intention to carry this important investigation to a definite conclusion in the expectation of tracing the change in intensity and direction of the magnetic field through many thousands of years.

In the course of a study of the relations of magnetic storms and microseismic activity at the Huancayo Magnetic Observatory over a two-year period, it was found that the maximum daily amplitudes of microseisms seem to show correlation with magnetic character-figures, depending on the time-lag introduced.

GEOELECTRICITY

Under the auspices of the American National Research Committee for the study of the Parícutin Volcano in Mexico, a reconnaissance was made in the latter part of 1945, to determine whether a program of electrical studies should be undertaken there and particularly whether it would be possible to advance our knowledge of the mechanism by which electricity during thunderstorms is generated, by a study of the unique conditions existing at the volcano. From observations made with an electrometer in the vicinity of the volcano-cloud, it was found that sudden field changes, similar to those accompanying a lightning discharge, occurred frequently during intense eruptions. These field-changes were much smaller than those associated with lightning.

The apparently increasing pollution of the atmosphere has been the object of further study. Tests and discussion of accumulated data on the pollution of the Earth's lower atmosphere, have shown that the pollution is gradually increasing, not only over the ocean near industrial land areas and the principal trade routes, but also over the regions of the ocean remote from such activities. It was ascertained that the amount over the oceans apparently doubled between 1914 and 1929. The gradual increase of industrial and commercial activities of nations is bound to play an important part in atmospheric pollution and gives rise to speculation as to the consequent changes in the composition of the atmosphere and their ultimate effect on life on the Earth.

Analysis of results obtained at Washington, D. C. shows a substantial diminution in the rate of ionization when the soil is wet as compared with that when it is dry. The same holds true when the ground is covered with snow and when it is uncovered. There is also revealed a definite seasonal and diurnal variation in the atmospheric ionization.

Electronic equipment for measuring rapid changes in the conductivity of the atmosphere for airplane use is included among the new instrumental developments.

By direction of Congress, the Weather Bureau, with the cooperation of the Army, Navy, and National Advisory Committee for Aeronautics, established the Thunderstorm Research Project to study the microstructure and dynamic processes of thunderstorms. The first phase of the project was conducted near Orlando, Fla. in the spring and summer of 1946, during which period 91 storms were selected for analysis and detailed study. Electrostatic field measurements could not be made because of non-availability of necessary instruments, but during the latter part of the period Army P-61 plane crews made visual observations of lightning flashes and strikes on the planes.

The second phase of the project began Oct. 1, 1946, and the field operation of this phase will be initiated about April 1, 1947, near Clinton County Army Air Field, Wilmington, O. This operation will closely approximate the methods used during 1946, except for the utilization of some new and improved techniques resulting from experience gained the first season and the use of 14 electrostatic field recorders that have been loaned to the project by the Navy.

While the thunderstorms of the 1946 season were of the convective type, the move into a middle latitude area is for the purpose of investigating the characteristics of other types of thunderstorms, particularly those related to or connected with the movement of fronts.

OBSERVATORIES AND SURVEYS

The five magnetic observatories of the U. S. Coast and Geodetic Survey (Cheltenham, Tucson, Honolulu, Puerto Rico, and Sitka) continued in operation. In Hawaii, a new magnetic and seismological observatory has been completed to replace the former Honolulu Observatory which had to be abandoned because of disturbing effects on the instruments emanating from the nearby airfield. The new site is about four miles from the former one.

The regular geophysical programs were continued throughout the year at the observatories of Pilar, La Quiaca, South Orkneys, and San Miguel in Argentina, at the Vassouras Observatory in Brazil, and at the Magnetic Section of the National Astronomical Observatory of Mexico, at Teoloyucan. The Huancayo Magnetic Observatory, operated by the Carnegie Institution of Washington, continued to pursue its program of operations in geomagnetism, geoelectricity, and allied fields. Because of its unique position near the geomagnetic equator and its activities in so many branches of geophysics, this is the most important geophysical observatory in the Western Hemisphere.

Excellent progress has been made in the magnetic survey of Uruguay undertaken by the Servicio Geográfico Militar. This survey called for a network of 77 stations spaced at intervals of approximately 50 to 60 kilometers, 62 of which had been occupied by Nov. 12, 1946, and it was expected that the field-work would be completed by the end of the year.

The experimental continuously recording declination-station set up at Gatlinburg, Tenn. by the U. S. Coast and Geodetic Survey, to obtain data on the diurnal variation and secular change, was operated from October 1945 to February 1946, at which time it was serviced and allowed to operate until April 1946. The experimental records were so promising that the equipment was returned to Washington and served as a model for the construction of similar instruments for installation elsewhere. It is proposed to build, as soon as conditions permit, a network of about 20 stations in the United States. These stations are to operate for periods of three to six months without servicing and are expected eventually to record continuously the declination, horizontal intensity, and vertical intensity.

CANADA, GREENLAND, ALASKA

The Canadian observatories of Meanook and Agincourt, under the Dominion Observatory, continued in operation throughout 1946. At the Godhavn Observatory in Greenland, complete magnetic records were obtained. The temporary station at Ivigtut was discontinued July 16, 1945.

The Observatory at College, Alaska, was operated through the collaboration of the University of Alaska and the Carnegie Institution of Washington until June 30, 1946. After that date the magnetic program was continued by the U. S. Coast and Geodetic Survey, and the responsibility for ionospheric work was transferred to the newly formed Central Radio Propagation Laboratory at the National Bureau of Standards, Washington. A survey of a tract of land, leased by the University of Alaska, is being made and preparations are in progress for the erection of a permanent first-order magnetic observatory by the U. S. Coast and Geodetic Survey. A bill to authorize an appropriation for the establishment of a Geophysical Institute at the University of Alaska was passed by Congress and signed in July 1946 by President Truman.

POLAR REGIONS

Magnetic observations were made at eight stations in the region of the North Magnetic Pole by an observer of the U. S. Coast and Geodetic Survey in connection with the Nanook Expedition of the U. S. Navy. One station was at Thule, Greenland, and the others were on Devon Island and neighboring islands of Canada. Results obtained on the *Pacusan Dreamboat,* during its non-stop flight from Hawaii over the Arctic regions to Egypt, have been interpreted to indicate that the present position of the North Magnetic Pole has shifted somewhat from the position determined by Amundsen's expedition in 1904, but the amount of this shift is as yet undetermined. Observations made on the R. C. M. P. schooner *St. Roch* on her voyage in these regions in 1944 seem to indicate that the Pole is still on Boothia Peninsula. Further expeditions are being planned for the purpose of establishing the actual position of the North Magnetic Pole.

Among the objects of the Expedition of the U. S. Navy to Antarctica which left Dec. 2, 1946, is a long series of magnetic observations at Byrd's base in Little America, and as many observations at field stations as may be obtained. All three parties of the expedition have been provided with complete field magnetic instruments suitable for polar observations, one in particular suitable for work in the vicinity of the South Magnetic Pole which they hope to locate definitely. The U. S. Coast and Geodetic Survey has made the necessary plans, trained the scientific staff, and furnished two scientific members of the expedition.

The American Geographic Society and a large group of other agencies are sponsoring an expedition to Graham Land under the leadership of Commander Finn Ronne, U. S. N. R. In addition to a vigorous aerial mapping program a rather thorough scientific program is planned. Two bases will be established. For the more northerly station the U. S. Coast and Geodetic Survey has supplied a seismograph and recorder, the Weather Bureau a most complete set of meteorological instruments, Harvard University a cosmic-ray meter, and the Department of Terrestrial Magnetism a set of field magnetic instruments. Magnetic directions during the aerial reconnaissance will be controlled by eye-readings of declination at the base station. From the more southerly base, exploring expeditions will investigate the unexplored regions to the southwest and undertake a broad series of field magnetic observations in that area.

COSMIC RAYS

With the return of peacetime conditions, the resumption of cosmic-ray research may be expected, particularly in the field of high-energy radiations in the study of which natural cosmic radiation may be employed.

The programs, carried out with the support of the Committee on Coordination of Cosmic-Ray Investigations, at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, at the Bartol Research Foundation of the Franklin Institute, at the California Institute of Technology, at the University of Chicago, and at the New York University, have been pursued to the extent permitted by the conditions of emergency and reconversion. The cosmic-ray meters and the five widely distributed points (Cheltenham, Huancayo, Teoloyucan, Christchurch, and Godhavn) have been successfully maintained. For the California Institute of Technology, Dr. R. A. Millikan states that a vigorous start has already been made in the program of counter-registered flights to the top of the atmosphere in the area between Oklahoma City and Saskatoon. These flights are very important because it is in this latitude range that the predictions of Millikan and his colleagues locate the incoming hydrogen rays, and it is the last and most critical latitude in which their theory of the origin of cosmic rays has not been checked. It will not, however, be possible to start on the expedition until a satisfactory improvement of the reliability of counters has been achieved. It is possible, therefore, that the flights may not take place until some time in 1947.

The cosmic-ray data obtained at the station at Teoloyucan (altitude 2,285 meters) in Mexico show certain unexplained anomalous features as compared with the records from the four other stations. They seem to be at variance with the accepted hypothesis of variation with geomagnetic latitude. In order to confirm these findings or to provide a means of explaining them, a meter has been installed at Rio Piedras (Puerto Rico), which is in approximately the same latitude as Teoloyucan but at sea level.

In about ten years of continuous records, three abrupt increases of from 8 to 20 per cent in the cosmic-ray intensity have been observed. Each of these unusual increases began one hour or less after solar flares, with simultaneous radio blackouts lasting for several hours. Magnetic records on the night side of the Earth indicate no significant change in the field at the time of the fade-outs yet the cosmic-ray records show that the increases occurred simultaneously on the day and night side. These increases do not correspond to the pattern of a variation due to large currents in the ionosphere arising from ultraviolet ionization (which only enhance the regular diurnal variation on the day side of the Earth) and hence they do not seem to be ascribable to changes in the magnetic moment of the Earth. It is difficult to imagine very large changes in the magnetic moment of the Sun due to a flare. The most reasonable hypothesis to date is that the cosmic-ray "Sun bursts" are due to particles accelerated in some way by the flare itself, possibly by some obscure "betatron action" in the vicinity of the Sun (or within the flare). The particles are emitted from the Sun with sufficient energy to reach the Earth at magnetic latitude 48° but not at the equator, hence high in the energy band between 10^9 and 10^{10} electron volts. If it should be definitely established that these increases are due to particles acquiring their energy from some such process on the Sun, then similar processes on the stars might possibly account for all cosmic radiation.

With the report for the year ended June 30, 1946, the Committee for Coordination of Cosmic-Ray Investigations, formed in 1932, concluded its functions and the administration of its unfinished activities were entrusted to the Department of Terrestrial Magnetism.

IONOSPHERE

Rapidly moving ionospheric clouds have been detected in the Earth's outer atmosphere (ionosphere) during magnetic storms—times when the ionosphere undergoes marked fluctuations which result in the fading or even the disappearance of radio signals. These clouds of charged or ionized matter enter the ionosphere, moving in from long to short range and out again in a few minutes. They are of fundamental importance because of their effects on radio transmission. The cloud form travels at velocities of from 1 to 2 km per second although the constituent particles no doubt move very much faster. With the aid of the new photographic panoramic ionospheric recorders, developed at the Kensington Ionospheric Laboratory (DTM, CIW), it is possible to obtain individual photographs of ionospheric activity at adjustable intervals of 5 to 30 seconds. The technique has been perfected to the extent that successive records can be projected as motion pictures. Thus the results may be presented visually, facilitating interpretation and study and providing means for study of special ionospheric features which occur during magnetic storms, eclipses, radio fade-outs, etc. It is thus possible, through projection, to study rapidly an enormous number of data, select portions for critical study, and visualize dynamic events of short duration. This method is also susceptible of other applications in research and education.

The measurements at the station at Maui, Hawaii, belonging to the world network of ionospheric stations set up by the Wave Propagation Committee of the Combined Communications Board, showed a striking increase in noise with field intensity recorded on approximately 15 megacycles during a radio fade-out and solar flare suggests a solar origin of the noise.

The Department of Transport of Canada, in connection with the Canadian Wave Propagation Committee, is operating ionospheric stations at Clyde, Churchill, Chelsea, Prince Rupert, and St. Johns, Newfoundland, as well as a mobile station between Churchill and Winnipeg. This group constitutes the Canadian portion of the world network of ionospheric stations.

INTERNATIONAL MEETING

An extraordinary General Assembly of the International Union of Geodesy and Geophysics at Cambridge, England, July 19 to Aug. 2, 1946, was attended by delegates from 16 countries. A draft agreement for scientific collaboration between the International Council of Scientific Unions and UNESCO was approved. A Committee on Social Value of Earth Sciences was also approved. A Union report volume on operations of the Union and its associations, including the Association of Terrestrial Magnetism and Electricity, from 1939 through 1946, is being prepared for publication early in 1947. The Eighth General Assembly of the International Union of Geodesy and Geophysics and its associations will be held in Norway, Sept. 5-15, 1948.

DR. FLEMING'S RETIREMENT

Dr. John Adam Fleming who has been connected with the Department of Terrestrial Magnetism since its establishment in 1904, becoming its Director on Jan. 1, 1935, retired June 30, 1946. During his long association with the Department, he has taken a major part in the important enterprises which have resulted in outstanding contributions to the sciences of geophysics. He has also been General Secretary of the American Geophysical Union since 1925 and President of the International Association of Terrestrial Magnetism and Electricity since 1930. Dr. Merle A. Tuve, Chief Physicist, Department of Terrestrial Magnetism, became Director July 1, 1946.

PUBLICATIONS

Publications dealing with terrestrial magnetism by the U. S. Coast and Geodetic Survey include its "Isogonic chart for 1945, United States." [This chart bears the same number as the edition of 1940 (No. 3077) but it is drawn on a new base-map]; "Magnetic observations in the American Republics, 1941-44"; "Magnetic observatory results at San Juan, for 1929-30"; "Magnetic observatory results at College, near Fairbanks, Alaska, for the second Polar Year October 1932 to March 1934." The Survey's Serial 644 "Magnetic declination in the United States 1945" and the "Magnetic observatory results at Honolulu, Hawaii, for 1937-38" are in the press. There are also being published by the U. S. Hydrographic Office, complete world magnetic charts for all elements based on data resulting from the comprehensive analyses of world-wide magnetic observations since 1905 which have been prepared by the Department of Terrestrial Magnetism.

The American Geophysical Union held its 25th annual meeting in Washington, May 27 to 29, 1946. Its *Transactions* have been issued regularly in bimonthly parts, each of which includes original papers, progress-reports, reviews, abstracts, and bibliography, information pertaining to the Union, and notes of interest to geophysicists.

The quarterly journal *Terrestrial Magnetism and Atmospheric Electricity,* published by the Johns Hopkins University Press, completed its 51st annual volume in 1946. It contains original contributions to geomagnetism and geoelectricity and allied subjects, sections on magnetic storms, magnetic character-figures, notes, reviews, and lists of recent publications.

Geophysics, the quarterly official publication of the Society of Exploration Geophysicists, completed its 11th annual volume in 1946. This journal is devoted to general and applied geophysics, and in its pages are found papers dealing with the magnetic and electric methods of geophysical prospecting.

The last two of the 13 volumes of *Scientific Results of Cruise VII of the Carnegie* during 1928-1929 under command of Capt. J. P. Ault, have been published by the Carnegie Institution of Washington. The first of these contains the "Ocean atmospheric-electric results," the second a series of papers on the "Work of the *Carnegie* and suggestions for future scientific cruises." "Magnetic results from Watheroo Observatory, Western Australia, 1919-1935," being Volume VII-A of the Researches of the Department of Terrestrial Magnetism, is now in press.

METEOROLOGY AND CLIMATOLOGY

By F. W. Reichelderfer
Chief, United States Weather Bureau

GENERAL

In the field of meteorology and climatology, the year 1946 marked the resumption and expansion of normal activities, as the pendulum swung away from wartime emphasis on military applications of the weather sciences back to increased service to the general public and private interests, especially commercial aviation. The U. S. Weather Bureau experienced a considerable increase over 1945 in requests from the public for weather advice. This appears to be owing to an aroused interest in the subject, responding to the restoration of full peacetime distribution of weather information and to the recent rapid expansion of domestic and international air traffic.

The year also brought increased civilian use of instruments developed during the war which utilize discoveries in fields such as electronics. The return of veterans well trained in meteorology has provided governmental and private weather services with new personnel of a caliber not hitherto available on a general scale. The training of meteorologists, though greatly curtailed in comparison with the war years, is nevertheless much superior in scope to pre-war instruction.

INSTRUMENTS AND OBSERVATIONS

Until recently, no completely satisfactory means has been available for determining the height of a cloud ceiling during daylight. At least a partial solution to this problem has come with the employment of the ceilometer, an instrument which uses a modulated light beam and a sensitive electronic detector to measure ceiling heights day or night. This device also follows the light beam through a thin cloud layer, making it possible to measure the thickness as well as the height of thin clouds and, at times, the height of a second layer above.

An important advance in upper air observation is the use of radar equipment to track a target attached to a free balloon and thereby to obtain the speed and direction of the winds aloft. A related development is the "rawinsonde" observation, a combination of pilot balloon and radiosonde techniques. As the radiosonde, carried aloft by balloon, transmits to the ground station data on atmospheric pressure, temperature, and humidity, its impulses are tracked by sensitive direction-finding devices and the velocity of the winds moving the balloon are computed. The Army and Navy have successfully used radar in the detection of cold fronts, thunderstorms, hurricanes, and other phenomena; present Weather Bureau plans envisage the installation of radar at 31 stations throughout the country. Prospects appear excellent for the widespread employment of radar as a forecaster's aid, particularly in the local short-term forecasting of showers, thunderstorms, and squall lines. These recent developments in meteorological instruments are summarized by A. F. Spilhaus (*Bul. Am. Met. Soc.*, Vol. 27, pp. 399-409).

Finally, mention should be made of the notable value of the weather ships maintained in the Pacific by the U. S. Navy and Coast Guard. Before the installation of this service as a military measure, forecasters in the United States had only a small number of ship reports, confined to a few steamer lanes, as sources of information on weather developments over the vast Pacific. Since storms in our latitudes travel largely from West to East, the observational data supplied by the dozen weather vessels, stationed widely over the ocean, are of considerable assistance in forecasting for the North American area.

THUNDERSTORM RESEARCH

Hand in hand with the exploration of new instrumental and observational techniques goes investigation of special phases of meteorology. To acquire basic knowledge of the thunderstorm, one of the most serious hazards to aviation, a joint program was undertaken during the year by the Army, Navy, National Advisory Committee for Aeronautics, and the Weather Bureau. The first part of the project was conducted near Orlando, Fla. in an area subject to maximum thunderstorm activity of a rather simple, cellular type. A network of 56 ground stations recorded complete atmospheric data as thunderstorms moved over the test area. Aircraft and gliders, equipped with the various instruments needed to observe conditions in the storm clouds themselves, were flown through at various intervals and at different levels. The second phase of the investigation will involve a similar analysis of middle latitude continental thunderstorms. It is expected that the entire project will be concluded by June, 1948.

THEORETICAL RESEARCH

Turning to research of a theoretical nature, it is found that studies of convergence and divergence, vertical motion, and the mechanism of pressure changes have been vigorously conducted at a number of the universities. These topics are both closely interrelated as well as intimately connected with such important problems as the formation of clouds and precipitation and the processes of cyclogenesis and anticyclogenesis. The effects of divergence and advection on the lapse rate were investigated by a New York University group, including Fleagle (*J. Meteor.*, Vol. 3, pp. 9-13) and Panofsky (*J. Meteor.*, Vol. 3, pp. 45-49). At the Massachusetts Institute of Technology, research into the mechanism of pressure changes was directed by Haurwitz and Austin (*J. Meteor.*, Vol. 3, pp. 57-77); the advective method of preparing prognostic pressure charts was tested under the supervision of Haurwitz and Malone (*J. Meteor.*, Vol. 3, pp. 83-93); and Haurwitz examined the relation between the wind field and pressure changes (*J. Meteor.*, Vol. 3, pp. 95-99), with the conclusion that the concept of the isallobaric wind should be abandoned. Similar studies were conducted elsewhere but their results remain unpublished.

In the field of long-range forecasting, the Weather Bureau and the Massachusetts Institute of Technology are continuing their joint study of methods for preparing forecasts of mean weather conditions for periods two to six days in advance. Progress along these lines is hampered by inadequate knowledge of the general circulation of the atmosphere, a problem now being attacked by the meteorological staff of the University of Chicago. Two recent contributions to extended forecasting research are an examination of the normal fields of convergence and divergence at the 10,000-foot level by Namias and Clapp (*J. Meteor.*, Vol. 3, pp. 14-22) and Rossby's discussion of the energy and frequency propagation in certain types of plane waves in the ocean and in the atmosphere (*J. Meteor.*, Vol. 2, pp. 187-204).

At the Institute for Advanced Study at Princeton, exploratory studies have been initiated on the use of the electronic computer for the rapid solution of complex meteorological problems, hitherto unsolvable by ordinary methods of calculation. It is hoped that this project may lead to worthwhile techniques for numerical weather prognostication and may serve to expedite research on general circulation problems.

The recent pioneer work on rockets, guided missiles, and high altitude aircraft has underscored the need for pooling and enlarging present scanty knowledge of the physical processes and circulation patterns of the atmosphere 100,000 feet and higher. Isolated workers in various sciences have conducted investigations along special lines, but there remain as yet unattempted the tasks of correlating the data, checking their internal consistency, formulating a concerted system of research, and developing techniques for forecasting physical changes in the high atmosphere. A start has been made towards organizing such a comprehensive program, however, and it is believed that the meteorologist, because of his experience in analysis and forecasting for the lower atmosphere, is in a position to contribute much to its success.

METEOROLOGICAL TRAINING

During the war more than 5,000 students were trained in advanced meteorology through intensive one-year professional courses conducted at several American universities. The majority of this group became Army and Navy weather officers, and they have now been practically all released from the armed forces. With the exception of 300 or 400 who have been engaged as meteorologists by governmental agencies, universities, airlines, and other organizations, or have returned to school for advanced meteorological study, nearly all of these veterans have given up meteorology for other lines of work. Most of them have resumed careers interrupted by the war.

Prior to 1940 very few educational institutions offered undergraduate curricula leading to a degree in science with a major in meteorology. As a result of experience gained during the war training program in meteorology and of the recognition of the need for basic college instruction in the science, the majority of the schools having graduate courses in meteorology now offer undergraduate curricula as well. Such programs provide individuals with the type of training for junior professional work in the field that has been available to students in other geophysical sciences, and equip them with a well-planned basis for graduate study.

On the graduate level, training has expanded greatly over the pre-war period, when only a handful of advanced students were regularly enrolled at each of the several universities having a graduate meteorology department. At present there appear to be about ten students working toward an advanced degree in meteorology for every one so engaged before the war. This increase will undoubtedly have a very beneficial effect on meteorology as a whole, by providing an adequate number of well qualified personnel for research and teaching, functions which the intensive war courses did not wholly satisfy, since they were necessarily oriented towards practical military requirements.

INDUSTRIAL METEOROLOGY

A number of newly established private weather services are engaged in supplying business interests with specialized weather information. These private concerns supplement the work of the Weather Bureau, which has pioneered in applying meteorological and climatological aids to the development of agriculture, transportation, and industry, but being a government agency it is not in a position to give specialized service to all business groups in all locations. The private weather firms are granted permission to receive weather data by teletype from the government-controlled lines. Most of them are engaged in furnishing special forecasts of weather developments likely to affect the operations of their clients, but the anticipated widespread integration of climatological factors with business planning has yet to be effected by these private weather services. In expanding their new field, private weather consultants are faced with the problems of correlating a combination of changing weather elements with sources of gain or loss for a particular industry, maintaining a constant and reliable liaison to warn their clients of unusual developments, and conducting "on the spot" investigations of means to improve both the scope and detail of their service. Indications are that the private practice of industrial meteorology will in time exercise a considerable influence on the national economy.

CLIMATOLOGY

One of the significant trends observed in this science during the year was the increased demand on the Weather Bureau for specialized application of climatological data in the fields of aviation, shipping, agriculture, commerce, and industry.

To keep abreast of this demand, a program has been initiated in the states of Louisiana, Mississippi, Arkansas, Oklahoma, and Texas, which is to be extended eventually to the whole country. This program is the machine tabulation of weather observations, which not only is more economical of time than the manual methods of compilation heretofore used, but also allows more complete analysis of the data. In the past, climatological compilations have been limited almost entirely to such simple statistical elements as averages, extremes, and accumulated totals. Machine tabulation will provide complete summarizations, including frequency distribution and probability of important climatic elements in various forms, in accordance with the needs of the particular interest being served. As a result of the extensive climatological studies conducted by the Army and Navy, using machine tabulation methods, a library of 60,000,000 punched cards representing observations made in this country and abroad has already been created. Such developments as these point the way to future integration of previously unconsidered climatic factors with standard planning in a host of activities, of which building construction, airport designing, farm management, and consumer goods handling are only a few.

PUBLICATIONS

Works of interest to meteorologists appearing during 1946 include *Meteorology, with Marine Applications,* by W. J. Donn, and a *Handbook of Meteorology,* by Beers, Berry and Bollay, both published by McGraw-Hill of New York. A long felt need was met by the *Weather Glossary* compiled by A. H. Thiessen and published by the Weather Bureau.

A loss in the field of periodicals was the *Journal of Aeronautical Meteorology,* which suspended publication as of December, 1946.

AMERICAN EXPLORATION

By Robert M. Brown
Professor, Rhode Island College of Education

AMERICAN GEOGRAPHICAL ANTARCTIC EXPEDITION

Commander Finn Ronne, who was second in command on one of the Byrd Expeditions, planned to set out late in 1946 for Marguerite Bay on the Palmer peninsula as leader of an expedition under the auspices of the American Geographical Society of New York City to the Antarctic. The party expects to arrive before March 1, 1947 so that adequate preparations for the winter may be made. It is hoped that the camp and equipment left there in 1941 by Admiral Byrd will be available. An operational base from which field operations will be conducted will be established at the base of Palmer peninsula some 200 miles south of Marguerite Bay. The expedition sailed in an 183-foot wooden vessel from the Navy supply, of sturdy construction, and in addition to the crew there was a scientific personnel consisting of biologists, geologists, physicists, climatologists, etc.

A thorough study of the unexplored area between 35 degrees and 80 degrees, west longitude, and from the occupational base to the South Pole, in the northeastern quadrant of Antarctica is planned. Among other objectives are a search for the southern boundary of Weddell Sea; some decision on the question of the possible extension of Weddell Sea to Ross Sea thus dividing Antarctica; the collection of data on ice, wind, and water movements to provide a better understanding of weather conditions; sampling of polar animals and birds for study in museums; and the study of oil and mineral resources. The expedition plans to be gone two years. It was equipped with two or three airplanes, a snowmobile, and dog sledges.

BYRD ANTARCTIC EXPEDITION

Admiral Richard E. Byrd is in charge of an Antarctic expedition which includes 4,000 officers and men of the Navy and more than a dozen vessels, designed in part to train personnel and equipment in polar temperatures and to continue investigations of a scientific and exploratory nature left undone by the American expedition of 1939-41.

The expedition in three divisions left early in December, 1946, and plans to return in March, 1947. One division under Capt. Richard H. Cruzen, second in command to the Byrd Expedition of 1939-41, includes the flagship *Mount Olympus,* Coast Guard ice-breaker *Burton Island,* cargo ships *Yancey* and *Merrick,* and a submarine, the *Zennet.* Another division under Capt. George F. Dufek, naval aviator and a member of a former Byrd Expedition, includes the seaplane tender *Pine Island,* the oiler *Canisteo,* and the destroyer, *Brownson.* The third division commanded by Capt. Charles A. Bond, veteran of the Aleutian campaign, is made up of the seaplane tender *Currituck,* the oiler *Cacapon,* and the destroyer, *Henderson.*

A base will be established on the Ross Sea and the aircraft carriers will launch the aircraft for flight operations. Altogether the expedition is well equipped to do a maximum amount of work in many lines during the short Antarctic summer.

MACMILLAN ARCTIC EXPEDITIONS

Donald B. MacMillan with sixty specimens of birds for the Colorado Museum of Natural History, returned in late summer from his twenty-fourth Arctic Expedition on the *Bowdoin.* Plans are now in progress for his twenty-fifth trip with geologists, botanists, anthropologists, and ornithologists, along the Labrador Coast. Baffin Land, and Greenland to within ten degrees of the Pole, to sail in mid-June, 1947.

DAHLGREN CUBAN EXPEDITION

Dr. B. E. Dahlgren, chief curator of the Department of Botany, Chicago Natural History Museum, has returned from an expedition to Cuba, where observations on a genus of palms especially represented on the island were made. Photographs and materials for study were obtained and also collections for exhibit and for the herbarium of the Museum.

MEXICAN EXPEDITIONS

Alfred L. Rowell, artist on the staff of the Department of Anthropology, Chicago Natural History Museum, was in Chichen Itza, Mexico during the summer of 1946. Buildings at Chichen Itza were excavated and restored during 1926-1929 by Dr. Paul S. Martin of the Carnegie Institution of Washington, D. C., and Rowell has in preparation a miniature diorama of this ancient Maya village for the Museum.

Karl P. Schmidt, chief curator of Zoology, Chicago Natural History Museum, continued in 1946 collections begun in 1945 in the Mexican state of Coahuila. It planned to make a complete study of the animal life of this region, and Schmidt was engaged also in making a reconnaissance for future explorations.

Charles Bogert, curator of the department of Amphibians and Reptiles of the American Museum of Natural History, left New York in August in a search for rare aquatic rattlesnakes reported to inhabit certain Mexican lakes and to collect varieties of snakes and lizards not now represented in the Museum's study collection. The expedition will in addition set up "blinds" to study living lizards and to record their actions day by day. The personnel includes Dr. Albert P. Blair, assistant curator of the department of animal behavior, who will study phases of the reproductive biology of toads and other amphibians; Dean Amadon, assistant curator of birds, who will collect and observe birds; Dr. John Moore, associate professor of Biology at Barnard College, who will collect frogs later to be crossed with native North American species in hybridizing experiments; Dr. Karl Schmidt to continue his studies on the extent and distribution of certain reptiles; and Rodolphe Ruibal, Harvard student, will act as field assistant.

EL SALVADOR, NICARAGUA, HONDURAS

Dr. Margery C. Carlson, assistant professor of Botany, Northwestern University, led an expedition to Ahuachapan, El Salvador, to collect plants. Little is known of the flora of this region and the collection will fill a gap in the knowledge of Central American flora. Besides the flowering plants, collections of algae, fungi, and certain forms of beetles will be attempted. With Dr. Carlson, Miss Kate Staley will go as assistant. The expedition is sponsored by the Chicago Natural History Museum and Northwestern University.

Paul C. Standley, curator of the Herbarium, was in Nicaragua, Honduras, and El Salvador on an eight months' botanical survey and Frank C. Wonder, staff taxidermist, in Trinidad to make a general collection of mammals, reptiles, amphibians, and birds. Both are from the Chicago Museum of Natural History.

PERU

Donald Collier, curator of South American Ethnology and Archaeology of the Chicago Natural History Museum, left Chicago in May for Peru where he will supervise excavations to collect materials representative of early Mochica and Chavin pre-Inca cultures. These tribes of about A. D. 500-1,000 inhabited a desert area between the Peruvian coast and the Andes.

Colin C. Sanborn, curator of mammals of the Chicago Natural History Museum, conducted the Peruvian Zoological Expedition of 1946 to continue the surveys of two expeditions during the period 1939-1942, which were interrupted by the war. Sanborn spent his time in the jungle area of Amazonian Peru where he collected mammals, amphibians, and reptiles. A brief period was spent at Lake Junin, over 14,000 feet in altitude where land snails and small mammals of especial interest, and large and peculiar frogs were found. Of special significance is a rare animal, the Bassariscyon allemi (apparently so rare as never to have acquired an English name) obtained by Sanborn. This is a raccoon-like animal which ranges from Costa Rica to Central Peru. The Bassariscyon was not desired for exhibition purposes but for anatomical studies to establish relationships between it and certain other animals such as the panda and bear.

Junius B. Bird, assistant curator of Archaeology in the American Museum of Natural History, is in Peru to seek evidence of non-agricultural peoples who lived some thousands of years ago in a valley near Trujillo. It is expected that coordination of geographical, archaeological and ethno-sociological data will result in a broad study of culture changes and adaptations since several scientists of other institutions will join Bird. Dr. William D. Strong of Columbia University will study the chronology of the ceramics; Dr. Wendell C. Bennett of Yale University will concentrate on the architectural features of the ancient adobe structures; Dr. Gordon R. Wiley of the Smithsonian Institution will survey present-day land utilization for an estimate of former populations; and Bird will search for remains of the earliest pre-pottery cultures never before found in Peru.

John C. Pallister, Department of Insects and Spiders, American Museum of Natural History, left in September for Peru to study the insect life of the remote Cordillera Azul and Pampa del Sacramento plateau country. This expedition, it is announced, will mark the beginning of a planned series of entomological expeditions throughout Latin America for the purpose of acquiring scientific study collections. The last civilized stopping place for the expedition will be the small village of Tingo Maria in the Peruvian interior. From this point the expedition will proceed to the more inaccessible territory to be studied. It is expected that about 300,000 specimens of beetles, flies, bees, butterflies, moths, spiders, and scorpions will be collected. An intensive search will be made for some very rare species of mammoth moths of the family Saturnidal which attain wing-spreads of seven inches. Felix Woytkowski, a leading professional insect collector, will accompany Pallister.

COLOMBIA

Dr. R. A. Stirton, University of California, has returned from a geological study of the eastern slopes of the Colombian Andes and reports that the llanos covering more than half of Colombia is expanding. There is evidence of a gradual geological uplift of the plain area and the burning of the grasses of the plain burns part of the bordering jungle; thus from these two causes the plains lands are increasing in area. Dr. Stirton states that the soil is good and the foothill climate is agreeable notwithstanding its low latitude, and he believes with good transportation facilities the area has great promise as a cattle raising country.

VENEZUELA

Dr. William Beebe led the forty-sixth expedition of the Department of Tropical Research of the New York Zoological Society which left New York during February and returned in September. The researches begun in 1945 were continued at Rancho Grande, a great building erected by Dictator Gomez in the heart of the National Park jungle at 3,500 feet elevation in the northwest part of Venezuela. The expedition was made possible by the Government of Venezuela and the Creole Petroleum Corporation. The members of the Department's staff were

Jocelyn Crane, research zoologist, and Henry Fleming, entomologist. Observations were concentrated on the ecology of the fauna and life histories of vertebrates and insects. Collections were made whenever necessary.

AFRICA

Mr. Lerner, a trustee and field associate in the department of fish and aquatic biology, American Museum of Natural History, left in October for Nairobi, Kenya Colony, to search for unusual fresh water fish in little known lakes in the interior of Africa. In addition Mr. and Mrs. Lerner will conduct a big game expedition in Kenya Colony and Tanganyika to collect wild life specimens for the Nova Scotia Museum. The Lerners will use a "walkie-talkie" radio equipment in the hunt for big game. This two-way communication system will be a help in the field in spotting game and in maintaining contacts within a range of five miles between groups of the expedition during hunting and collecting trips.

Hugo Rutherfurd led the Rutherfurd-African expedition on a Cape Town-to-Cairo trip by jeep and supply truck to photograph African natives and wild life. He was accompanied by his wife and T. Donald Carter, assistant curator of the Department of Mammals of the American Museum of Natural History. The expedition plans to be in the field for about a year. Certain specimens of mammals needed by the Museum will be sought but the main objective is to make extensive technicolor motion pictures of Africa for educational purposes. Rutherfurd plans to photograph native life in various African communities which can be used in every level of school life; visual teaching aids on the customs, economics, and art of races and peoples; family relationships and events of daily life such as foods and cookery, clothing, agriculture, housing, hunting, trade, music, dancing, and craftsmanship. At "blinds" near waterholes moving pictures of wild animals will be taken.

Arthur Vernay, field associate of the Department of Mammals of the American Museum of Natural History, returned in October from a collecting trip in Nyasaland. The expedition collected a few unusual specimens of large game, but in general it concentrated on collections of small mammals such as shrews, mice, squirrels, and others. Altogether more than 1,800 specimens of mammals and an equally well-rounded and extensive collection of reptiles were obtained. Dr. Harold E. Anthony of the Department of Mammals, Leonard Brass of the New York Botanical Gardens, and Capt. Guy Shortridge, director of the Kaffrarian Museum of King William's Town, South Africa, accompanied Vernay. Brass made an extensive collection of botanical specimens. The expedition was in the field about five months, from May to November of 1946.

OCEANOGRAPHY

By L. P. Disney
U. S. Coast and Geodetic Survey

GENERAL

The year 1946 was a period of transition in oceanographic work from military application to that of more general research. The reconversion was slow, and in a number of fields normal activities probably will not be resumed before 1947. Because of the classified status of oceanographic work during the war no reviews were published for the years 1944 and 1945. Brief references to accomplishments during the war, consequently, are included in this review.

HYDROGRAPHIC OFFICE

To continue on a broader basis the oceanographic program developed during the Second World War, the Secretary of the Navy approved the establishment of the Division of Oceanography within the Hydrographic Office on Jan. 29, 1946. The Division of Oceanography is responsible for collecting and codifying oceanographic data and for preparing charts, manuals, and special reports of an oceanographic nature for the Navy Department, other government agencies, the Merchant Marine, the airlines, and others. In cooperation with the Office of Naval Research, the Division will coordinate the oceanographic programs of the Navy Department and promote training and basic research at universities and oceanographic laboratories. In order to carry out this mission a governmental Advisory Committee on Oceanography has been established with representatives from all government agencies concerned and will meet at least twice a year. The fields of interest cover virtually all phases of Oceanography although the greatest emphasis will be on physical and geological programs. A quota of nine professional billets was established for the current fiscal year.

During the Second World War a great deal of oceanographic work directed towards military application was carried on at universities and private oceanographic laboratories under contract with OSRD, the Hydrographic Office and the Bureau of Ships. Because of the many benefits arising from this procedure it is being continued with funds provided by the Hydrographic Office and the Office of Naval Research but with a change in emphasis from problems of immediate military interest to those of a more basic character.

As 1946 represented a period of transition relatively few new studies were completed. Although many of the topics investigated during the Second World War have been declassified, only a few reports have yet been completed for publication by the Hydrographic Office. Additional reports are being published by the institution and individuals that conducted the investigations. Many topics concerned with sea, swell, and surf, permanent and tidal currents, distribution of temperature, character of beaches, etc. studied by short-cut methods during the war emergency are now being examined in greater detail so that conclusions can be established theoretically as well as by empirical observations.

COAST AND GEODETIC SURVEY

The oceanographic work carried out by the Coast and Geodetic Survey during the past few years was for areas of strategic importance to the armed forces. Along the Atlantic Coast the work was generally confined to coastal waters used by shipping and anchorages for naval vessels. Surveys were executed for speed trial courses and for beach areas used by the armed forces for amphibious training. Wire drag and other surveys were made to locate and determine the least depth over wrecks in shipping lanes. Along the Pacific Coast hydrographic surveys were made in the vicinity of Seattle, the Straits of Juan de Fuca, southeastern Alaska, the Alaska Peninsula, and along the Aleutian chain from Dutch Harbor as far west as the international boundary west of Attu.

Developments in the field of electronics have been investigated for possible use in oceanographic work. Sonar equipment, used during the war principally for locating submarines, has been utilized by survey ships to locate shoals, wrecks, and obstructions. Reflecting radar, installed on several ships, has been used for navigation and reconnaissance hydrographic surveys since 1944. Shoran equipment developed during the war for precise bombing has been adopted to use on hydrographic surveying. It makes possible hydrographic surveying during poor visibility, fog, or darkness by measuring electronically distances from a surveying ship to the known locations of two shore stations.

Two important innovations have been introduced recently on nautical charts to facilitate the use of electronics in position finding. The first is the use of gradient tints, in addition to closely spaced contours, to bring out vertical land relief. Shades of brown, with the darkest at the highest elevations, have served effectively in making the relief discernible. Gradient tints have been used experimentally on a number of Pacific Coast charts.

Secondly, the use of the Loran (long-range navigation) method of position finding at sea has called for a modification of the nautical chart. To facilitate the use of the instrument there has been added to the nautical chart a grid of Loran lines of position which are in exact registry with the chart information. To avoid obscuring the standard nautical information, the Coast and Geodetic Survey is printing for experimental purposes the Loran grid on the reverse side of North Atlantic Coast Sailing Chart No. 1,000. The Loran position can be obtained on this grid and the point pricked through to indicate its position in reference to the charted detail.

Tidal work of the Bureau during the years of war was directed towards military application. At the request of the Navy, current surveys were made for use in connection with the launching of ships, testing of torpedoes, and the construction of port facilities. Detailed tide and current reports for particular areas were prepared for JANIS (Joint Army-Navy Intelligence Studies). Special tide and current predictions were calculated for strategic places and a number of special tide and current tables were published for combat zones. Also published for use in planning operations were monthly tide and light diagrams showing the relation between the stage of the tide and sunlight, moonlight or darkness.

Tidal records together with temperature and density observations of sea water from a number of ports in Central and South America are being obtained through the participation of the Coast and Geodetic Survey in the State Department program of cooperation with American Republics. During the past year new tide stations were established at Puerto, Mexico and Progresso, Mexico.

In an analysis of records from some 20 tide stations in the eastern Pacific, covering a stretch from 57°N. latitude to 33°S. latitude C. K. Green in his paper on "Seismic Sea Wave of April 1, 1946, as Recorded on Tide Gages" (*Transactions,* American Geophysical Union., Vol. 27, No. 4, August 1946) shows that the average ratio of initial rise to succeeding fall of the water was one to three, which may account for the frequent mention of an initial recession by eyewitnesses. Computed travel-time curves are shown to be in good agreement with the observed times of arrival of the seismic sea wave. The average velocity of the wave from the epicenter off the Aleutian Islands to Valparaiso, Chile, a distance of some 8,066 miles, was 445 statute miles per hour. The period of the seismic sea wave for the nearer stations averaged 15 minutes, while for the farther stations it averaged 17.4 minutes.

COAST GUARD

During the war years no oceanographic program was carried out by the Coast Guard. However, a Coast Guard officer working under the Commander-in-Chief, U. S. Atlantic Fleet (Commander, Task Force 24) performed ice observations by air scouting and collected information on the distribution and relative quantities of ice in the Atlantic. The regular International Ice Patrol was resumed during the 1946 season although no oceanographic program was carried out. The patrol simply observed and charted the ice. It is of interest to note that the air observation of ice is a wartime development which will be continued in addition to the use of the patrol vessels. Several times a week a patrol aircraft scouts the limits of the ice field, thus giving a much more comprehensive picture of the ice than had heretofore been obtainable. The Coast Guard Oceanographic program in connection with the International Ice Patrol will be reactivated in 1947.

SCRIPPS INSTITUTION OF OCEANOGRAPHY

War research during the years 1944-1946 was devoted to two major investigations:

(1) Oceanography of the surface layers of the Pacific with special reference to problems in submarine warfare. In connection with this study monthly charts of sea-surface temperatures and currents were prepared, many of which have been published by the Hydrographic Office. Besides preparing special compilations, detailed studies of the oceanographic conditions around the islands of Japan have been conducted, leading to a better understanding of the oceanic circulation in these waters. Studies of the boundary layer atmosphere-ocean have led to a theoretical examination of the transformation of polar continental air to polar maritime air. It has been shown that, when cold air flows over the water, static instability is maintained in the sea with temperature slightly increasing and salinity slightly decreasing with depth.

(2) Problems related to forecasting of sea, swell, and surf. On the basis of a theoretical study of the growth of waves under the influence of wind, definite relationships were established between wind, fetch, and duration on the one hand, and wave characteristics on the other hand. Furthermore, rules for the advance and decay of swell were arrived at. The transformation of waves as they travel from deep to shallow water and the relation between swell and surf were examined. Methods were developed for the forecasting of surf conditions on any given beach provided that the character of the swell in deep water, the configuration of the coast line, and the bottom topography were known. The different methods were used extensively during the war for forecasting sea, swell, and surf conditions.

Work on these two topics is being continued under contract with the U. S. Navy Hydrographic Office.

During the year 1946 the general research activity has remained greatly curtailed because many of the staff members were still on leave with the armed forces or on leave in civilian work. Studies have been primarily in the fields of marine bacteriology and physiology of marine organisms.

WOODS HOLE OCEANOGRAPHIC INSTITUTION

The major investigations undertaken during the war period covered the following studies:

(1) Anti-fouling paints and fouling organisms. One phase of this study has provided much new information on the depth and distance from shore at which fouling is to be expected, the relation of temperature to its rate of growth, and the geographical limits of the occurrence of the various species.

(2) Temperature distribution in the surface layers of the North Atlantic. Improvements in the bathythermograph were developed to the point where reliable temperature-depth curves down to roughly 150 meters could be secured from vessels traveling at speeds up to 20 knots. The application of the bathythermograph to subsurface warfare was such that the Navy procured and put into routine service a considerable number of these instruments.

(3) Air turbulence and convection over the ocean. Studies were centered around the problem of predicting the performance of smoke screens over the water, and especially in gaining a better understanding of the relatively complicated thermal structure which may exist in the lower air near a beach.

(4) Sea, swell and surf. A wave period analyzer was constructed which has great promise in the future of wave research.

(5) Underwater acoustics. From the oceanographic standpoint, perhaps the most interesting development in underwater acoustics is the system proposed for locating survivors at sea. The basic ideas involved have recently been made public by the Navy Department under the code name SOFAR.

(6) Seismic Refraction Measurements in Shallow Water. High qual-

ity of records obtained has served to clarify many problems of the transmission of sound waves both in the water and through the bottom.

(7) Underwater explosive phenomena. Much of the work centered around the problem of developing better gauges for measuring the pressure wave produced by an explosion both in the air and in the water.

The reconversion of the Institution to a peacetime basis during 1946 has been seriously postponed by the Navy's request that some 35 members of the staff be assigned to studies of the oceanographic aspects of the atomic bomb tests at Bikini Atoll.

The research vessel *Atlantis* has carried out surveys designed to locate accurately the northern edge of the Gulf Stream. For the first time Loran was used as an aid in such oceanographic work. She has also occupied an extensive network of deep hydrographic stations in the roughly triangular area Cape Hatteras—Bermuda—Puerto Rico. Supported by a grant from the Geological Society of America a group working under the direction of Dr. W. M. Ewing occupied a number of seismic stations over the continental shelf between Delaware and Maine. The Institution's new research vessel *Balanus* was employed in this work during the whole of the summer of 1946.

PERIODICAL PUBLICATIONS

American Mineralogist
450 Ahnaip St., Menasha, Wis.
American Scientist
Yale University, New Haven, Conn.
Bulletin of the Geological Society of America
419 W. 117th St., New York City.
Economic Geography
Clark University, Worcester, Mass.
Economic Geology
Natural History Bldg., Urbana, Ill.
Geographical Review
American Geographical Society, Broadway and 156th Street, New York City.
Journal of Geography
3333 Elston Ave., Chicago, Ill.
Journal of Geology
5750 Ellis Ave., Chicago.
Journal of Geomorphology
Columbia University, New York City.
Journal of Paleontology, The
U. S. National Museum, Washington, D. C.
Journal of Terrestrial Magnetism and Atmospheric Electricity
Johns Hopkins Press, Baltimore.
Mining and Metallurgy
29 West 39th Street, New York City.
National Geographic Magazine
National Geographic Society, Washington, D. C.
Nature Magazine
295 Madison Ave., New York City.
Petroleum World
412 West Sixth Street, Los Angeles, Calif.
Science
Smithsonian Institution Building, Washington, D. C.
Scientific Monthly
Smithsonian Institution Building, Washington, D. C.
Travel
116 East 16th Street, New York City.
Travel America Guide
71 Vanderbilt Ave., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Association for the Advancement of Science, Smithsonian Institution Building, Washington, D. C.

American Assn. of Petroleum Geologists, Box 979, Tulsa, Okla.

American Geographical Society, Broadway at 156th St., New York City.

American Meteorological Society, Blue Hill Observatory, Milton, Mass.

Appalachian Mountain Club, 5 Joy St., Boston, Mass.

Association of American Geographers, University of Minnesota, Minneapolis, Minn.

Explorer's Club, 10 W. 72nd St., New York City.

Geological Society of America, 419 W. 117th St., New York City.

National Geographic Society, 1146 16th St., N.W., Washington, D. C.

Oceanographic Laboratories, University of Washington, Seattle, Wash.

Paleontological Society, The, Johns Hopkins University, Baltimore, Md.

Scripps Institution of Oceanography, La Jolla, Calif.

Seismological Society of America, University of California, Berkeley.

Society of Economic Paleontologists and Mineralogists, University of Illinois, Urbana, Ill.

Woods Hole Oceanographic Institute, Woods Hole, Mass.

DIVISION XXI

CHEMISTRY AND PHYSICS

PHYSICAL CHEMISTRY

By George M. Murphy
Associate Professor, Yale University

GENERAL

Research voluntarily withheld from publication during the war years for security reasons and that pursued during the course of government contracts are gradually appearing in the literature. Of most immediate interest to the physical chemist is much of the atomic bomb research; physical chemistry of protein solutions; many of the instruments and electronic techniques developed at The Radiation Laboratory, Massachusetts Institute of Technology. The importance of releasing promptly as much of this material as possible is generally recognized.

RADIOACTIVE ISOTOPES

The most significant single publication from the atomic bomb project since the Smyth report is a list of the nuclei formed during fission, together with their decay characteristics, fission yields, and chain relationships (*J. Am. Chem. Soc.*, Nov.). This paper includes information both from the scientific literature and from the project reports. It will serve as a valuable source of data for the 160 radioactive fission products now recognized.

Many such fission products will be useful for tracer studies or other researches. Chain reacting piles now in operation can also produce other radioactive species in quantities vastly greater than was possible by previous methods. These isotopes may be purchased from The Clinton Laboratories of the Monsanto Chemical Co., Oak Ridge, Tenn. Orders are considered by an advisory committee of scientists, and preference is given to research programs involving the fundamental sciences, for therapeutic purposes and for training and education. The greatest demand has been for C^{14} which is useful for tracer research in photosynthesis, metabolism, rubber chemistry, cancer research, and reaction rates. Interest has also been shown in radioactive iodine, phosphorus, and gold for experimental study of hyperthyroidism and in the treatment of leukemia.

RADIOCHEMISTRY

Having secured a supply of suitable isotope, the chemist will usually find it necessary to convert this material from its original form into new compounds before the chosen tracer experiment can be studied. This procedure will often be difficult not only because of the relatively small samples of isotope available and its radioactive disintegration but also because the required compounds may be a complex one and not easy to prepare. The latter difficulty will generally be great in biological or physiological studies. It is for these reasons that synthetic radiochemistry is of great importance.

When radioactive isotopes are created, as in the neutron irradiation of nitrogen compounds to form C^{14}, the new nucleus possesses considerable excess energy which can be used in effecting synthesis. This so-called

Szilard-Chalmers process has been studied at the University of California (Yankwich, Rollefson, and Norris) where it was shown that a variety of active carbon compounds can be so formed. The reaction products depend on the conditions of neutron irradiation, type of solvent, and other factors. The same idea has been used by Reid (Columbia University) to prepare radioactive amyl iodide by neutron irradiation of a pentane solution of iodine.

TRACER EXPERIMENT

A typical application of radioactive isotopes to a chemical problem was made by Bardeen, Brattain, and Shockley (Bell Telephone Laboratories). A thin layer of radioactive copper was electrolytically deposited on a copper surface. After oxidation had been secured, successive layers of the oxide were removed and analyzed for activity. The observed self-diffusion of copper is in agreement with a theory proposed by them and confirms a theory of oxidation suggested by Wagner in 1933. The same radioactive copper was used by Duffield and Calvin (University of California) to study the kinetics of exchange between copper acetate and chelate compounds in pyridine solution.

CHEMICAL EFFECTS OF RADIOACTIVITY

An interesting attack on the problem of petroleum genesis has been made at the Massachusetts Institute of Technology. Fatty acids and hydrocarbons have been bombarded with both deuterons and alpha particles. The decomposition products are complex but it could be shown theoretically that the energy absorbed is practically independent of charge, mass of bombarding particle and its velocity. Among the products were compounds identical with those naturally occurring in petroleum.

SEPARATION OF ISOTOPES

A comprehensive summary of the thermal diffusion method for isotope separation has been presented by Jones and Furry (Harvard University). An important feature of this paper is the design of two experimental units: one for concentrating C^{13} in methane; the other for He^3. The latter occurs in nature to the extent of only one part in 1-10 million of helium but it would be useful as a cyclotron particle, and its exact mass is of interest to the nuclear theorist. Experimental studies of the thermal diffusion method have been made at Yale University, both in confirming the theoretical predictions and in obtaining partial separation of the oxygen and chlorine isotopes.

Another method for separation of He^3 has been proposed by Franck (University of Chicago). The greater part of a sample of liquid helium in the superfluid state would be allowed to escape from a container; He^3 would remain in the residue. If successful, this experiment would also confirm some of the current theories of the superfluid state.

Separation of the potassium isotopes was achieved by electrolytic methods at the Georgia School of Technology and at the National Bureau of Standards. In the former case, aqueous solutions of potassium chloride were electrolyzed at a flowing mercury cathode; in the latter experiment, the net transport of potassium ion was kept at zero by flowing electrolyte and separation is said to occur because of differing ion mobilities of the isotopes.

The chemical exchange method, developed by Urey and his colleagues (Columbia University) has been adapted to the commercial production of C^{13} by the Eastman Kodak Co. The material is sold as potassium cyanide with excess isotope concentrations up to 26 per cent. The more concentrated samples are to be allocated for tracer use in research on cancer and metabolic diseases.

MOLECULAR SPECTROSCOPY

Two new techniques have been applied to the treatment of the complicated spectra obtained with polyatomic molecules. In one, proposed by Kron (General Electric Co.) a suitable electrical network is set up for the molecule. An alternating current network analyzer, numerical methods, or digital calculating machines are then used to obtain the frequencies, vibrational modes, and other characteristics of the molecule. Tests with molecules previously studied by other methods indicate that the network procedure may be useful and that it may minimize the laborious mathematical computations now required.

The second technique has been used by King, Cross, and Thomas (Arthur D. Little, Inc., Brown University and Massachusetts Institute of Technology). They have adapted standard punched card equipment to calculate the expected appearance of certain band spectra of hydrogen sulfide. The results are in good agreement with observation, and here also the methods will be valuable where other procedures might be prohibitively laborious.

Punched card techniques and electrical accounting machines have also been used by Pauling and his collaborators (California Institute of Technology) for crystal structure and electron diffraction calculations.

A modification of the usual group theory method, commonly used for the spectrum of gaseous molecules, has been proposed by Halford (Harvard University) for solids and liquids. Application of it to determine the expected spectrum of gaseous, liquid, and crystalline benzene shows it to be in agreement with observation. It is also concluded that all previous interpretations of these spectra must be revised in the case of benzene.

Molecular absorption in the microwave region, about one centimeter wave length, has been studied at several laboratories for ammonia, water vapor, and a few other molecules. Absorption in ammonia arises from the oscillatory motion of the nitrogen atom through a plane containing the three hydrogen atoms. Although this absorption was previously known, a hyperfine structure of about 30 lines has now been observed using the new techniques. Although not anticipated by theory, it has now been shown that the structure of the spectrum is caused by coupling of nuclear quadrupole moments. The observations are in striking agreement with the extended theory.

MOLECULAR BEAMS AND NUCLEAR INDUCTION

The molecular beam magnetic resonance method, developed by Rabi and his coworkers (Columbia University), has been reviewed by Kellogg and Millman (*Rev. Mod. Physics*, July, 1946). Originally designed for determination of nuclear magnetic moments, it has been adapted for measurements more directly concerned with physical chemistry. For example, Hughes (Socony Vacuum Laboratories) has shown how it may be used to obtain electric dipole moments and moments of inertia for diatomic molecules, and from the Columbia laboratory, measurements of nuclear quadrupole interactions in sodium halides have recently been reported.

A new magnetic phenomenon known as nuclear induction, has been studied by Purcell, Torrey, and coworkers (Radiation Laboratory, Massachusetts Institute of Technology and Harvard University) and by Bloch and coworkers (Stanford University). In these experiments, the material to be studied is placed in a constant magnetic field, at right angles to which there is a radiofrequency. A component of nuclear polarization at right angles to both fields can be observed owing to voltages which it induces.

This experiment was designed primarily for measurement of nuclear gyromagnetic moments but the effect depends also on relaxation times in a solid on liquid. Preliminary studies with water, ice and paraffin show that protons in the latter have much shorter relaxation times than either in liquid water or ice. This unexpected result may lead to important knowledge of the solid state. Other applications will certainly arise.

LOW TEMPERATURE STUDIES

The phenomenon of superconductivity, exhibited by certain solids at a few degrees above absolute zero, has also been reported by Ogg (Stanford University) to occur in metal-ammonia solutions at temperatures as high as 200° absolute. Dilute solutions of sodium in liquid ammonia are rapidly frozen. A large decrease in electrical resistance occurs; in one example, the resistances of the liquid at —33°C. was 10,000 ohms, that of the solid at —95°C. was only 16 ohms. Superconductivity was demonstrated by the classical Kammerlingh Onnes ring experiment in which annular disks of the frozen material, between the poles of an electromagnet, retained persistent currents after removal of the magnetic field. The experiment has been repeated at Oxford and Washington universities with confirmation of the effect in general but some disagreement as to details and interpretation.

The explanation offered by Ogg involves the supposition that electron pairs trapped at vacant negative ion sites in the crystal lattice are forced to obey Bose-Einstein statistics. Superconductivity occurs as a necessary consequence, according to current theories.

PROTEIN INVESTIGATIONS

For some years. Cohn in the Department of Physical Chemistry, Harvard Medical School and his coworkers have studied the physical chemistry of protein solutions. During the war years, these researches were aided by grants from The National Research Council and by government contracts. The substance most thoroughly investigated was human blood.

A series of reports currently appearing in the *Journal of The American Chemical Society* describes a system for separation of the protein and lipid components of blood into a number of fractions. The methods are said to be adaptable to other biological systems. Large quantities of the serum and plasma proteins, separated according to the Cohn methods, were made available for clinical use and are now licensed products.

Simultaneous controls of several variables during the fractionation process are required in order to obtain optimum conditions for the separation. Thus far, the more important ones have been salt, protein, water miscible organic precipitant, hydrogen ion concentration, and temperature.

From the same laboratory, Scatchard and his collaborators report on the osmotic pressure of serum albumin, which accounts for the efficacy of this material and plasma in the treatment of shock. Osmotic pressure relationships for systems of the sort considered were given by Donnan in 1911 but the results were applicable only to ideal solutions. These restrictions have now been removed by Scatchard. The theory was tested by determining the osmotic pressure and sodium chloride distribution across a membrane impermeable to albumin. The osmotic pressure was found to be a quadratic function of the concentration of the latter. The first term in this expression corresponds to a molecular weight of 69,000.

COLLOID AND HIGH POLYMER RESEARCH

Two new journals dealing with these subjects made their appearance in January 1946. One is called *The Journal of Polymer Science;* its editorial board has representatives from The American Chemical Society, The American Physical Society, and the Society of Rheology as well as foreign members. The other, *The Journal of Colloid Science,* also has an international editorial board with Victor K. LaMer, Columbia University as editor-in-chief. Both journals appear bimonthly. During 1946, about 100 papers were published in these two journals, and a considerable further number in these important fields were published in other American journals.

PHYSICS

By Thomas H. Osgood
Professor and Director, Division of Physical Science,
Michigan State College

GENERAL

Since there are over 300 journals in which accounts of worth-while research in physics are published, it is obviously impossible to do justice to the literature in a brief review. The selection of material is therefore a matter of individual choice, determined by the background and interests of the reviewer. The problem of recording and making available in libraries up to date information on research in all subjects becomes more pressing each year as the volume of publication increases. For more than three centuries, the great libraries have had to double their capacity every 16 years, but this can not go on much longer. Physicists are particularly interested in the development of new ways of storing information in small space, if only for the reason that it is from technical discoveries that these methods emerge. A discussion of some possible solutions of the problem has been given by D. Roller (*Amer. Jour. Physics,* 14, 300).

A goodly proportion of scientists, including some of those who aided in the development of atomic bombs, have been much concerned about the future use of atomic energy, and have been, for scientists, unusually emphatic in their writings and speeches. There is among competent men a clear realization (1) that the industrial use of nuclear energy is not to be achieved in the immediate future; (2) that for some years the vast range of new radioactive materials which can be produced in chain reacting piles will permit such advances in medical and biological science as to dwarf all other developments; and (3) that investigations into appropriate techniques for using nuclear energy are likely to be so costly that government must take a leading part in sponsoring such work. About these points there is widespread agreement. About the political and social consequences of the use of atomic energy there is great confusion and some apprehension among scientists and laymen alike.

World events of the years 1939-46 raised certain aspects of physics to such importance that the lack of trained personnel has become acute. Large research organizations controlled by some form of governmental authority, laboratories of industrial corporations, physics departments of universities, colleges, and high schools are all very short of capable physicists; and, of these, the ones which offer the smallest financial returns to the individual are the least well staffed. Educational institutions happen to occupy this unfortunate position at the moment, with the result that the training of adequate numbers of high caliber physicists will be delayed at a time when their services are most in demand.

There have been or are being established for the development of radioactivity and nuclear physics in the United States four National Laboratories whose work must be segregated and partially protected by security regulations because of the difficult and costly and, in untrained hands, dangerous nature of the operations they conduct. They are a natural outgrowth of wartime work on fission. In spite of their generous and widely publicized arrangements for cooperation with nearby institutions of higher learning, it is probable that many universities will not be able at once to avail themselves fully of the opportunities for cooperation, partly on account of the expense involved in equipping new laboratories, and partly on account of the heavy teaching duties which have fallen upon faculties.

NEUTRONS

Since the construction of the atomic bomb depended to a large extent on knowledge of the properties of neutrons, the publication of papers dealing with the behavior of neutrons was officially discouraged during the years 1940-46 in all countries where programs for the development of nuclear energy were under way. In several numbers of *The Physical Review* issued during 1946 are many original papers dated 1941 and 1942 which were "voluntarily withheld from publication until the end of the war." These papers represent researches of scientists, who, in those early war years, were not yet connected with government scientific agencies, and were therefore not yet bound by security restrictions. During 1946, also, there was a declassification—a word which represents the removal of an official veto on free publication—of many items of research concerning neutrons. This process has added something of the pre-war sparkle to meetings of professional physicists, but it has also given an inkling of how much scientific information still remains on the secret list, and of which the majority of physicists must remain in ignorance for some time.

The neutron is an uncharged particle of about the same mass as the proton. Since Chadwick's discovery of the neutron in 1932, its mass has been re-determined with gradually increasing precision. Measuring the mass of the neutron is not a simple weighing operation but is a process involving a consideration of the energy exchanges in a series of chosen nuclear reactions, and a rigorous application of Einstein's principle of the equivalence of mass and energy. The most acceptable mass changes slightly from time to time, according to scientific opinion concerning the trustworthiness of the experimental data from which the mass is deduced. For example, Kuan-Han Sun (*Physical Rev.* 69, 240), writing from New York in February, 1946, gave the mass as 1.00892 ± 0.00004 on the scale $0^{16} = 16.0000$. In July, Donald J. Hughes (*Physical Rev.* 70, 219) of the Argonne National Laboratory, improved this value to 1.008937 ± 0.0000075. These two reports illustrate the frequent changes which occur in the accepted values of the fundamental constants, and the gradual increase in precision which marks a series of re-evaluations.

The extent to which a layer of atoms obstructs the passage of a stream of neutrons depends markedly on the velocities of the neutrons. (In the same way, the number of collisions made by a man moving through a crowd depends on whether he walks or tries to run.) Since neutrons of different velocities cause transmutation in varying degrees, it is important to know what are the velocities of neutrons emerging from a typical laboratory source. The method used by J. H. Manley, J. A. Haworth and E. A. Luebke (*Physical Rev.* 69, 405) of the University of Illinois was simple. Suppose that a crowd of boys ran a 100-yard race, all starting together, and that the winner took 15 seconds. If a record were made of the number finishing during the 16th second, and during the 17th second, and so on, it would be possible to tell how fast the boys ran, and what proportion of them ran at a certain speed. Replace the boys, all starting together, by a burst of neutrons; think in terms of millionths rather than of whole seconds, and imagine the timing controlled electronically; then the descriptions of the boys' race and the neutrons' race become identical. The three authors, using neutrons issuing through a 14 cm. cube of paraffin, found that the distribution of velocities was Maxwellian, that is, like that of the molecules of a gas at ordinary temperatures, up to velocities of 3·5 km/sec, with an excess above the Maxwellian distribution for higher neutron velocities. To put it another way, 14 cm. of paraffin was enough to bring to thermal equilibrium all neutrons below 3·5 km/sec, but not above that velocity.

Other experiments with neutrons were devised to determine how much they were scattered by certain elements; how readily they were absorbed by others; how many nuclear fragments were ejected as a consequence of transmutation; in what directions the nuclear fragments were ejected, and what proportion at each angle; and at what particular neutron velocities nuclear disintegrations were most likely to occur. Meanwhile theoretical physicists were busy synthesizing the data into consistent theories from which new results could be predicted, as for example G. Placzek's article (*Physical Rev.* 69, 423) on the slowing down of neutrons in heavy substances, and E. Wigner's more general treatment of the problem of resonance reactions and anomalous scattering (*Physical Rev.* 70, 15).

Perhaps one of the most spectacular reports was that by W. H. Zinn and others (*Physical Rev.* 70, 102) describing the reflection of neutrons from crystal faces. A chain reacting pile, developed at the University of Chicago Metallurgical Laboratory in 1942, can produce a stream of neutrons thousands of times as intense as that available from any pre-war source. A narrow beam of these was selected by slits placed a few meters apart, and the beam was allowed to fall on the face of a crystal, following the scheme used in an x-ray spectrometer. Some of the neutrons were reflected at each of several different angles, and in this way a spectrum of the neutrons was obtained. This represented an advance in experimental technique rather than in theory, for L. de Broglie predicted in 1925 that every moving particle should possess a characteristic wavelength, so that moving particles such as neutrons would have some of the wave properties of x-rays. The relation $\lambda = h/mv$ giving the wavelength in terms of Planck's constant, and its velocity the mass of the particle of action, was amply verified by Davisson and Germer in 1927 for electrons, and formed the basis of these new experiments with neutrons. W. H. Zinn, along with E. Fermi (*Physical Rev.* 70, 103) also showed that neutrons, again like x-rays, could be reflected at very small angles from polished surfaces of graphite, glass, aluminum, beryllium, copper, zinc, nickel, and iron.

As soon as any experimental tool reaches the state of development of modern neutron beams, it is of the greatest importance to have standards of intensity to go by. Recognizing this, G. R. Gamertsfelder and M. Goldhaber (*Physical Rev.* 69, 368) have developed a standard neutron source which they call a "reproducible neutron standard" in which the intensity of emission can be varied by the experimenter over a range of about five times. Such a source has an important part in all nuclear measurements.

ACCELERATING MACHINES

The details of the structure of the complex nucleus are not well understood. The puzzling forces which hold protons and neutrons together are believed to be governed in part by the meson, a particle, positively or negatively charged, possessing a mass intermediate between that of a proton and an electron. It is to expedite the solution of nuclear problems that engineer-physicists are continually devising new machines to accelerate atomic projectiles to higher and higher energies. The machine-of-the-year is the synchrotron, with which optimists hope ultimately to produce particles with energies in the billion volt range, or nearly ten times as great as can be achieved directly by the great University of California cyclotron. By the end of 1946, however, no synchrotron was yet in operating condition, but the necessary mathematical theory was well worked out. Late in 1946, a machine of this type, designed for 300,000,000 electron volts, was under construction in California, and similar but not identical machines were being developed elsewhere in the United States and in Russia.

V. Veksler (*Jour. Physics U.S.S.R.* 9, 153) and E. M. McMillan (*Physical Rev.* 68, 143) were independently responsible for the basic idea of the synchrotron. A clear exposition of its principle appeared in a theoretical paper by D. Bohm and L. Foldy (*Physical Rev.* 70, 249) from which the following account is taken. It should be noted first that in a conventional cyclotron the frequency of the accelerating field is chosen to match the angular velocity of the ions, but as relativistic effects increase the masses of the ions they fall out of phase and are accelerated no more. In the cyclotron, the angular velocity, ω, of a particle of charge e and mass m, in a magnetic field H is given by $\omega = (ecH)/E$ where E is the total energy. Thus ω decreases as the energy increases. Suppose now that the instantaneous value of ω exactly matches the frequency of the accelerating field and that the ions are only a little late in crossing from one D to the other, so that the energy of the ions is still being increased. Then, ω will begin to decrease, and the ions will run later and later until they actually begin to lose energy by crossing the gap at the wrong phase. This will continue until the ions slow down to their original energy. The energy will then overshoot this value somewhat with ω increasing, until the ions are again in such phase relation to the applied field that they are accelerated in crossing the gap between the D's and the whole cycle is repeated. Thus the time of gap crossing and the energy undergo stable oscillations, and the ions stay very near a stable orbit.

If now the magnetic field H is increased a little, the angular velocity, by the equation above, will be too great for the instantaneous value of E. The ions begin to get across the gap a little earlier, increasing the value of E, until a new stable orbit is reached. Successive small increases in H will cause corresponding increases in E. Therefore, once a cyclotron is operating under stable orbit conditions, further acceleration of the ions can be accomplished by increasing the magnetic field slowly. Alternatively, the frequency of the accelerating voltage applied to the D's may be varied with a like result. It is essential, however, in either case, to make the variation slow, so that orbit stability may be preserved at all times. A machine utilizing either of these methods of acceleration is termed a synchrotron.

The most energetic particles yet created artificially are electrons from the General Electric Company's 100,000,000 electron-volt betatron. With x-rays produced by those electrons, some interesting effects have been reported by Marcel Schein, A. J. Hartzler, and G. S. Klaiber (*Physical Rev.* 70, 435). Using a cloud chamber of conventional size in a magnetic field, they have photographed a few, but only a few, particles heavier than positive or negative electrons, ejected by the x-rays. As explained below, the identification of ionizing particles by their tracks in a cloud chamber is a very uncertain matter, unless the tracks are abundant. The available evidence suggests that the heavy particles photographed to date in this experiment are mesons. Their masses can not be determined accurately, but a mass 200 times the electron's mass is not inconsistent with the observations.

COSMIC RAYS

Mesons are charged particles which may or may not always be born from disrupting atomic nuclei, and which have only a brief existence of one or two millionths of a second before they themselves disintegrate into electrons and neutrinos. The focus of interest in the field of cosmic rays is the question of the properties of the meson, and for this reason investigations on cosmic rays are an important part of nuclear research. Mesons and other particles are found in cosmic rays with energies of billions of electron volts; but they come at random times and places. These fast particles cause nuclear disintegrations, and it is in order to duplicate their effects under controlled laboratory conditions that physicists are so eager to construct powerful accelerating machines. Experiments now to be described, from a 1946 paper by Donald J. Hughes (*Physical*

Rev. 69, 371), may be taken as typical of current work on cosmic rays, although the experiments were actually performed in 1941 in Peru, during the University of Chicago's South American cosmic ray expedition.

At an altitude of 15,500 ft., 5,000 photographs of charged cosmic ray particles were taken with a Wilson cloud chamber. This instrument, when properly controlled and illuminated, shows a line of tiny water droplets along the paths traveled by the particles. The drops persist long enough to be photographed. If a uniform magnetic field is maintained in the chamber, the charged particles are constrained to move in slightly curved paths, whose radii are an important factor in analyzing the observations. Hughes' problem was concerned with measuring the proportions of different kinds of particles, their masses, and their velocities, with special emphasis on slow mesons. The vagueness of the word 'slow' is indicative of the uncertainty attached to such cosmic ray experiments. It is customary to call a particle *fast* when it exhibits no measurable curvature in a field of about 1,000 gauss, and is consequently traveling at nearly the speed of light; and *slow* when the curvature is definite, and the particle has energy not greater than a few million electron volts.

There are two ways of determining the nature and velocity of a particle in a cloud chamber. A fast lightweight particle leaves behind it a trail of very sparsely distributed water droplets; on the other hand, a slow massive particle makes a broad track, so thickly populated with water droplets that they can not be distinguished separately. Between these two extremes all kinds of gradations may appear. Since both mass and velocity separately affect the droplet density, it is usually necessary to appeal to other evidence to make a reliable identification of mass and velocity. This can be done in most cases. When this analysis fails, as it does for very fast particles, there is an alternative method. As a particle ploughs its way through the gas of the cloud chamber, it occasionally makes a close collision with an electron of the gas, driving it forward or at an angle to the main track. When this angle is measurable, it is usually possible to apply the laws of conservation of energy and momentum, and deduce the velocity of the primary particle.

Hughes used both these methods in his study of slow mesons at 15,500 ft. Perhaps the most important results of his experiments were (1) that mesons occur with a considerable range of masses, from about 25 to 200 electron masses, and (2) that the number of slow mesons observed increases rapidly with altitude, a fact which strengthens the supposition that they are born as such in the very high atmosphere from some other form of primary cosmic ray.

Another experiment of very topical interest was carried out by S. E. Goliar, E. H. Krause, and G. J. Perlow (*Physical Rev.* 70, 223). During the tests of captured German V-2 rockets at White Sands, New Mexico, the warhead of one of them was filled, not with explosive or equivalent inert matter, but with cosmic ray apparatus which transmitted by radio to scientists on the ground a great many simultaneous observations of the intensities of cosmic rays under different conditions of lead shielding. Satisfactory records, obtained between 40 and 70 miles altitude, indicated that, as expected, cosmic rays are much more intense in the fringes of the atmosphere than at ground level. Showers, for example, increased a few hundred-fold, and penetrating particles more than twenty-fold. Further tests will be needed to verify these figures and to correlate them with other observations.

It is perhaps appropriate to mention one topic related to cosmic rays because it has a bearing on current events and may therefore have a special appeal to the layman. The question is often asked, What are the radioactive effects of atomic bombs at places far distant from the explosion? Two notes by A. W. Coven (*Physical Rev.* 68, 279) and by G.

Herzog (*Physical Rev.* 70, 227) provide a rough answer. They measured the "background count" of radioactivity (including cosmic rays) in the atmosphere at ground level immediately before and after any change occurred which might have been due to a distant atomic bomb explosion. Any unexpected increase might be due to radioactive effects of the atomic bomb. Both observers reported a temporary increase, for a matter of some hours, amounting to about 75 per cent. The validity of these results is made doubtful by records of three other similar tests published in October, 1946, in no one of which was there any definite indication of a significant increase in atmospheric radioactivity due to the explosion of an atomic bomb several thousand miles away. In any case, since the normal background count is far, far below any danger level, apprehension on this score will be unfounded until the world becomes fairly thickly populated with atomic power plants.

SUPERCONDUCTIVITY

When a piece of lead, which ordinarily has a comparatively high electrical resistance, is cooled in liquid helium, a few degrees above absolute zero, its resistance diminishes to practically nothing. Such an occurrence is an illustration of superconductivity, a phenomenon whose details are not yet well understood. Much importance has been attached to a study of the effect, for it may provide a clue to some difficult points in theories of the structure of metals and of liquids. Liquid helium itself does not become superconducting even below 2° absolute, but it displays other remarkable properties, such as an almost negligible viscosity, and an incredible ability to creep over solid surfaces, which set it apart as a unique fluid.

Richard A. Ogg Jr. of Stanford University caused a flurry of interest when he announced (*Jour. Chem. Physics* 13, 533) in 1945 that comparatively weak frozen solutions of metallic sodium in ammonia showed superconducting behavior even at temperatures about 200 degrees above absolute zero. He made direct measurements of the conductivity of the frozen solutions at the temperature of liquid oxygen (−180°C), finding that the resistance was between 10 and 50 ohms, whereas at temperatures above the melting point the resistance was 1,000 times as great. Experiments were also performed in which a small ring of a solution between glass plates was frozen in liquid oxygen in a magnetic field. Upon quick removal of the specimen from the field, magnetic induction set up a circulating electric current which was detectable by a small search coil and ballistic galvanometer. Currents were found to persist for a minute or two in favorable cases. Such a long persistence of current indicated a resistance of the order of one millionth of one millionth of 1 ohm.

The experiments have been repeated by H. A. Boorse, D. B. Cook, R. B. Pontius, and M. W. Zemansky (*Physical Rev.* 70, 219) of Columbia University, both following Ogg's directions and following slight modifications of his procedure. In no case were they able to detect any superconducting properties of the sodium-in-liquid-ammonia solutions. In Oxford, J. G. Daunt, M. Désirant, K. Mendelssohn and A. J. Birch, long experienced in work on superconductivity, found (*Nature,* 157, 839) that the resistance of such solutions drops very appreciably on freezing, but they stated that the residual resistance was actually a property of the frozen solution and was not, as Ogg thought, due to poor contact at the electrodes, or to cracks in the frozen solid. The English physicists could not duplicate the Californian's results on persistent currents, and therefore could not agree that the frozen solutions were in a true superconducting state. Then J. W. Hodgkins of Ottawa (*Physical Rev.* 70, 568) described a series of experiments which gave strong support to Ogg's original results. Hodgkins found persistent currents in only a few per cent of the total number of trials, and believed, as Ogg did, that the low incidence of successful experiments was due to severe cracking of the samples on freezing. There the matter rested at the end of 1946, awaiting clarification by further investigations.

Daunt and Mendelssohn have also done a clever experiment to elucidate the properties of liquid helium II, as that liquid is called when its temperature is below the λ-point, which is 2.19° above absolute zero. The point at issue was this. It has generally been supposed that the frictionless transport of helium II required gravitational potential energy. However, the two Oxford men proved that such a transport takes place without a difference in gravitational potential energy; in other words, helium II can flow over a barrier from one vessel to another, even if both vessels contain liquid at the same level. This behavior is analogous to the flow of electric current under zero difference of potential, which is one way of describing superconductivity. Thus there is an experimental similarity between the two phenomena, and it is usually explained by presuming that the helium atoms, as well as the current-carrying electrons, have special properties with respect to energy, which are theoretically associated only with the absolute zero of temperature, but in these cases manifest themselves at a slightly higher temperature. It will be interesting now, as Daunt and Mendelssohn point out, to look for isothermal heat flow and persistent mass circulation in helium II.

NOBEL PRIZE

The Nobel Prize in physics was awarded in 1946 to Prof. P. W. Bridgman of Harvard University, famed for his experiments on matter under extremely high pressures (THE AMERICAN YEAR BOOK, 1938, p. 721) and for his writings on the philosophy of science.

ORGANIC AND INORGANIC CHEMISTRY

By C. M. SUTER

ASSOCIATE DIRECTOR OF RESEARCH, STERLING-WINTHROP RESEARCH INSTITUTE

GENERAL

The volume of published material dealing with research work carried out during the war years was at its peak during 1946. Almost every journal contained papers of the "Now It Can Be Told" type and in several instances one or more whole issues of a particular journal were devoted to reports of war-inspired research. For example, the July and August issues of the *Journal of the American Chemical Society* were largely filled with papers dealing with the synthesis of antimalarials carried out during the war. This was also true for the *Journal of Organic Chemistry*. Work on antimalarial syntheses ranked high in terms of laboratory work expended from the organic chemical standpoint.

At the Chicago meeting of the American Chemical Society, a symposium on fluorine chemistry lasted for several days. The very extensive series of investigations described originated because of the need for certain new fluorine compounds in the Manhattan project.

The details of yet another study, the work on the synthesis of penicillin, have not yet appeared since it was considered that it would be best to publish this in a monograph form rather than flooding the appropriate journals with the work.

PUBLICATIONS

The problem of properly abstracting and summarizing the vast amount of published material in the various fields of science grows with the years. With the disorganization of German science and its publications, the future of Beilstein's *Handbuch* and the *Chemische Zentrallblatt* became uncertain. Steps have been taken to improve and expand *Chemical Abstracts* published by the American Chemical Society to compensate for some of these losses.

With the publication of many reports on German research and technology under the auspices of the Publication Board, later changed to Office of Technical Services in the Department of Commerce, the need arose for a method of informing technical men what material was available. Starting early in 1946, the Department of Commerce published an abstract journal giving classified abstracts of material obtained from enemy countries and also recording abstracts of newly released data from war research done in this country. The material described in this new journal is for the most part not covered in *Chemical Abstracts,* hence any search of the literature must now include the new publication if it needs to be complete.

RADIO CHEMISTRY

The work of a scientific nature resulting from the Plutonium Project division of the Manhattan Project is to be described in a series of volumes known as the "Plutonium Project Record of the Manhattan Project Technical Series." The two volumes of interest to chemists will be 9A entitled *Radiochemistry and the Fission Products* and 9B, *Collected Papers on Radiochemistry and the Fission Products.* These are expected to appear during 1947. In the meantime there has appeared a concise review in tabular form of the 160 radioactive fission products now recognized as resulting from the operation of the uranium pile. The information needed to make a report of this kind required an enormous amount of chemical and physical investigation of the nature of the new nuclei and represents a great increase in the knowledge of isotopes of the various elements.

FLUORINE CHEMISTRY

Since fluorine chemistry in the past has been a relatively small fraction of chemical industry much work was necessary before suitable industrial methods for the preparation of fluorine and fluorinated organic compounds could be prepared on a large scale. Several practical fluorine cells, suitable for the preparation of fluorine on a considerable scale, have now been described. The capacity of these ranges as high as 2,000 amperes. The electrolytes in these cells are $KF \cdot HF$ (KHF_2). Satisfactory cells were developed by the cooperative effort of many investigators in several laboratories, including those of the Harshaw Chemical Co., Massachusetts Institute of Technology, Johns Hopkins University, E. I. du Pont de Nemours and Co. and the Hooker Electrochemical Co. In addition, the handling of fluorine on a laboratory scale was worked out in detail in the research laboratories of the Pennsylvania Salt Co.

The handling of fluorine presented many problems, including suitable containers and methods for compressing this highly active element. In brief, these problems were solved satisfactorilly, and fluorine can be handled in cylinders under pressure.

Much of the work using elementary fluorine was concerned with the production of fluorocarbons, compounds in which the hydrogens of ordinary hydrocarbons such as those obtained from petroleum, are completely replaced by fluorine. In the extensive series of studies carried out compounds having as many as 21 carbon and 44 fluorine atoms were prepared. The fluorination process is a catalytic one usually not involving elementary fluorine directly since this is too reactive, but a less active fluorinating agent. Such agents were discovered in the fluorides of certain metals in a high state of oxidation. Chief among these are cobalt trifluoride, manganese trifluoride and silver difluoride. In general hydrocarbon vapors were brought into contact with these fluorides at a fairly high temperature. The yields were quite good, varying up to 95 per cent depending on the hydrocarbon used.

In an alternative process it was found possible to fluorinate hydrocarbons with elementary fluorine provided the reacting gases were diluted with nitrogen and mixed gradually in the presence of the catalyst which consisted of a thin layer of silver fluorides on a copper base. The fluorocarbons made were not limited to aliphatic compounds but included many cyclic derivatives of both aromatic and naphthenic structure.

The workers involved in this field of research were very numerous and were located at a number of universities and industrial laboratories. These include Duke University, Columbia University, Johns Hopkins University, Purdue University, SAM laboratories, the du Pont Co., and the Hooker Electrochemical Co.

In addition to the fluorocarbons, other polyfluorinated products were obtained. These include perfluoroadipic acid. From this it was possible to obtain a series of compounds including octafluoro-1,6-hexanediamine which is a highly fluorinated analog of the amine used in the preparation of Nylon.

Another very interesting compound prepared was tetrafluoroethylene. This fluorocarbon is a highly reactive gaseous compound which boils at —76°C at atmospheric pressure. Upon polymerization it yields a solid product having most unusual properties for a resinous product, one of which is stability to heat, a temperature of 400-500° being necessary to bring about decomposition. It is to be expected that this polymer will develop a number of specialized uses and become an important member of this growing family of substances.

Perfluorobutadiene was also prepared. In contrast to the corresponding chlorine compound, this product is highly reactive and can be polymerized; the polymerization can be controlled to yield a dimer and trimer or can be carried further to give a thermoplastic high polymer.

ANTIMALARIALS

Although the synthetic antimalarial quinacrine (Atabrine [Registered trade mark of Winthrop Chemical Co.], mepacrine, Atebrin) proved of inestimable value in protecting the United States armed forces in widely scattered malarious areas, it is characterized by deficiencies which indicated the need for a better drug. Hence a comprehensive research program was organized under the auspices of the Committee on Medical Research of the National Research Council and financed by the Office of Scientific Research and Development. In addition, several large pharmaceutical houses and chemical companies took part in the program without being reimbursed by the Government for their expenses. The contribution made to this program by the organic chemists was the synthesis of many thousands of compounds, a large percentage of which were new, and the development of manufacturing methods for compounds which gave sufficient promise in the preliminary testing so that larger amounts were needed for clinical trial.

In as much as the most active antimalarial drugs known at the start of the program were quinoline and acridine derivatives, many additional representatives of these groups of compounds were synthesized. Apparently none of the new acridine derivatives, which were mostly analogs and homologs of quinacrine, showed any significant advantage over this compound. Among the quinoline compounds submitted, however, a number showed considerable promise. One of these, 7 - chloro - 4 - [4 - (diethylamino) - 1 - methylbutylamino] quinoline known commonly as SN-7618 and chloroquine, was tested on a large scale and found to be superior to quinacrine on several counts. During the year its commercial manufacture and distribution were started. It is colorless, avoiding the yellow skin coloration which occurs with quinacrine, and its action as a suppressive among those frequently exposed to infection may be maintained by weekly doses rather than the daily dosage required with quinine or quinacrine. Like quinacrine, however, relapses may occur in cases of vivax malaria.

Another compound, an 8-aminoquinoline derivative (SN-13,276) which is a variant on pamaquin (Plasmochin) shows promise of use in curing relapsing malaria when taken in combination with quinine. However, clinical testing is still under way. One of the most interesting chemical developments coming out of this program was the elaboration of several new methods for the synthesis of quinoline derivatives by Price and coworkers (University of Illinois). The important observation in this work was that ring closure of a 3-substituted phenylaminomethylenemalonic ester gave almost entirely (over 95 per cent) the 7-substituted quinoline whereas previous quinoline syntheses afford a mixture of 5- and 7-substituted quinolines under these circumstances.

In addition to the quinolines and acridines many other groups of compounds were synthesized and found to have anti-malarial activity. Altogether some 60 chemical classes gave positive tests in bird malaria. The more important classes include a group of new sulfa drugs, naphthoquinone derivatives and mannich bases derived from phenols. This work was summarized by Dr. C. S. Marvel (University of Illinois) and Dr. Robert C. Elderfield (Columbia University) at the comprehensive symposium on antimalarials held under the auspices of the Medicinal Chemistry Division of the American Chemical Society at its Atlantic City meeting April 8-12, 1946.

Shortly after the termination of active fighting in Germany, German research laboratories were visited under the auspices of the Technical Industrial Intelligence Committee (T.I.I.C.) to discover what unpublished research on antimalarials might be found. Nothing more beyond further studies in the 4-aminoquinoline series came to light. Reports on these visits are available from the Office of Technical Services, Department of Commerce, Washington, D. C.

PENICILLIN

In one of the first attempts to synthesize penicillin made by Folkers and coworkers (Merck & Co.) the reaction product was found to possess definite activity in the usual agar plate test. The activity was so small, however, that not more than 0.1 per cent of pure compound could have been present. At the time, this result was not taken very seriously because many compounds show a slight antibacterial action, and to isolate the component of the mixture responsible did not seem worth while. Later when all other methods of synthesis had failed du Vigneaud (Cornell University Medical School) returned to the task of determining whether the activity was caused by traces of penicillin or by some other impurity. When partial purification had been accomplished, strong evidence was obtained that benzylpenicillin (Penicillin G) was actually present both by biological testing and by the use of radioactive sulfur in the synthesis. With this encouragement and the use of counter-current fractionation techniques it was finally possible to isolate a few milligrams of authentic penicillin. Unfortunately the process is so expensive that it can in no sense compete with the natural product. Furthermore, because the yield is so low, the method does not throw any light upon the structure of penicillin, which is not yet completely determined.

The publication of a description of the isolation of benzylpenicillin was unexpected because publication of chemical work in this field has in general been in abeyance pending appearance of the monograph covering the cooperative work done both in this country and Great Britain in many laboratories on penicillin synthesis during the war period.

The attainment of the penicillin synthesis should make it possible to prepare a number of new compounds in this series, although at too high a cost for them to be useful in medicine. Already a variety of penicillins has been made by biological methods. Some of these are more active than benzylpenicillin, but apparently none has yet been found to be more useful therapeutically.

STREPTOMYCIN CHEMISTRY

Intensive work on the degradation and structure determination of streptomycin is under way in several laboratories because of the therapeutic possibilities of this antibiotic. Hydrolysis in acid solution yields a basic product streptidine, $C_8H_{18}N_6O_4$. Perhaps the simplest method for obtaining this is to isolate it as the crystalline sulfate. The ease with which the hydrolysis occurs is compatible with the idea that streptomycin is a combination of streptidine with streptobiosamine by a glycosidic linkage. Streptidine has little or no antibacterial action.

Another degradation product obtained from streptomycin is N-methyl-l-glucosamine. It was identified by showing its identity with N-methyl-d-glucosamine except for the sign of optical rotation.

A detailed examination of the behavior of streptidine established it to be one of the isomeric 1,3-diguanido-2,4,5,6-tetrahydroxycyclohexanes, or a relative of inositol, which is one of the members of the B vitamins complex. The structure was determined finally by conversion to a derivative of 2,4-diaminophenol which shows the position of the nitrogen linkages to the ring system.

Extensive work on the degradation products of streptomycin now clearly establishes its empirical formula as $C_{21}H_{39}N_7O_{12}$, and $C_{21}H_{41}N_7O_{12}$ for a reduction product, dihydrostreptomycin. It seems probable that the complete structure of streptomycin will be announced shortly, as the nature of the three units is now clear. It consists of the streptidine already mentioned which is linked through a glycosidic linkage with a disaccharide, the latter having one methylamino group. One can only comment on the remarkable diversity of structure exhibited by the naturally occurring antibacterial agents thus far studied.

CHEMISTRY OF MUSTARD GAS AND OTHER VESICANTS

In order to have a better understanding of the physiological properties, including the vesican action, of mustard gas, bis-(β-chloroethyl) sulfide, the fundamental chemical properties of this compound were subjected to an intensive investigation in several laboratories during the war.

It was found by Stein, Moore, Fruton, and Bergmann (Rockefeller Institute for Medical Research) that in the hydrolysis of mustard gas in aqueous solution one of the products is a sulfonium chloride which is even more toxic than mustard gas itself. This may be partly responsible for the physiological activity of the mustard. Mustard also forms a sulfonium compound by reacting with the sulfide group of methionine. In addition, it reacts with fatty acids in neutral solution and with amino groups. Since the compounds present in living cells include these various reactants, it is evident that the vesicant action may result from a variety of chemical changes. Although the sulfone obtained by the oxidation of mustard is vesicant in its action, it does not seem likely that the sulfone is formed *in vivo* and hence does not contribute to the toxic action of mustard.

During the First World War the Levinstein process for making mustard gas came into prominence. The reaction involved is the one between ethylene and sulfur monochloride. This was studied again in a comprehensive manner by Fuson, Price, and coworkers at the University of Illinois during the recent conflict, who were able to prepare and isolate for the first term the previously postulated intermediate, 2-chloroethylsulfenyl chloride. It was found that this sulfenyl chloride reacts rapidly with ethylene to yield mustard gas. Other olefins also react readily so that a number of homologs of mustard were made. The corresponding 2-chlorosulfenyl bromide was also prepared and converted into a bromine analog of mustard.

Levinstein mustard gas contains polysulfides as well as the normal monosulfide. In one part of the new investigation it was found possible to prepare a pure trisulfide. In addition a new polysulfide obtaining some 11 atoms of sulfur was isolated. The technical mustard gas contains about 30 per cent of a mixture of polysulfides. Of this mixture, the pentasulfide breaks down on heating to yield the trisulfide and a mixture of higher sulfides. The trisulfide is readily cleaved by chlorine to yield 2-chloroethylsulfenyl chloride and the chloroethyl dithiochloride which then undergoes further reaction. As a consequence of these results and others obtained during the course of the investigation, the various steps that occur in the Levinstein process became at last well understood. The fundamental studies carried out on the formation and reactions of mustard are of considerable general interest since the chemistry of polysulfides has been relatively obscure.

Several years before the recent conflict a new class of vesicants, the so-called nitrogen mustards, were discovered and received some attention. These have now been studied more intensively and a series of publications has resulted by Bergmann, Fruton, Golumbic, Stein, Stahmann, and coworkers of the Rockefeller Institute. In this group of compounds the chlorine atoms are separated from the nitrogen by two carbon atoms just as they are from sulfur in the older type of mustard. When a nitrogen mustard undergoes hydrolysis in slightly alkaline solution it is first converted into a cyclic immonium ion which is quit reactive chemically and physiologically. Some members of this group of nitrogen mustards may have valuable properties in treatment of disease since their activity tends to localize in growing cells including those characteristic of certain types of cancer. Some peacetime benefit may then result from this fundamental work on war materials.

WILLGERODT REACTION

The name of Willgerodt has long been associated with a transformation which results when an alkyl aryl ketone is heated to a high temperature in an aqueous solution of ammonium polysulfide. The resulting mixture contains an acid and an amide having the same number of carbon atoms as the original ketone.

Recently there has been a marked revival of interest in several laboratories in this reaction; as a consequence it is likely to become of practical value in the synthesis of a variety of organic amides, thioamides, and acids. The most important advance was the observation that not only ketones but also olefins, mercaptans, and other types of organic compounds can be utilized in one or another modification of the reaction. Thus the olefin styrene which is readily available at a moderate price, because of its wide use in synthetic rubber and resins, reacts with sulfur and morpholine (a nitrogen base) to give a thiomorpholide which is reported to have value as an insecticide. Similarly, olefins derived from petroleum may be converted into amides and acids which may be useful industrially. As has frequently happened in the past, what began as a fundamental study of an organic chemical reaction may enlarge the number of products available for industrial use.

ANTI-ANEMIA FACTOR

Several compounds have been isolated which possess blood-forming activity for animals and are also necessary for the growth of *Lactobacillus casei.* The structure of one of these substances, the so-called *liver L. casei* factor, has now been determined and the structure verified by synthesis. The molecule contains a glutamic acid residue, a p-aminobenzoic acid residue and a substituted pteridine nucleus. The chemical name is N- 4-(2-amino-4-hydroxy-6-pteridyl) methylaminobenzoylglutamic acid. One method of synthesis started with equimolecular quantities of 2,4,5-triamino-6-hydroxypyrimidine,p-aminobenzoyl-l-( )-glutamic acid and 2,3-dibromopropionaldehyde which gave a product containing 15% of the desired compound; the name pteroylglutamic acid was suggested for this new principle.

The isolation and synthesis of the *liver L. casei* factor has advanced another step the scientific understanding of the mechanism by which blood formation occurs. The work was carried out by a large group of scientists in the Lederle Laboratories and in the research laboratory of the Calco Chemical Division of the American Cyanamid Co.

SILICONES

The development of a new group of interesting compounds containing silicon was mentioned in 1945. During 1946 much of the scientific background responsible for these new organo-silicon compounds was published in the scientific journals and also well summarized in a monograph by Eugene G. Rochow (General Electric Co.) entitled, "Introduction to the Chemistry of the Silicones." The properties of the silicone polymers adapt various members of the group to a diversity of uses including the formation of water-repellent films, their use as lubricants and brake fluids and as resinous and rubber-like products. The members of the methyl silicone series, for example, exhibit an unusually small change of viscosity with temperature; they are chemically inert, are liquid over a wide range of temperatures and have a low freezing point. A trace of a silicone greatly reduces the foaming tendency of a lubricating oil. Some silicones may find use as dielectric media for transformers and other electrical equipment. In as much as a variety of application has developed from the moderate amount of research work expended on the silicone polymers thus far, many more industrial applications may be expected as this field is exploited.

SUGAR RESEARCH

Although it has been known for over 50 years that cane juice contains 1 per cent or more of reducing sugars in addition to the sucrose present, no one has been able to demonstrate the nature of these other carbohydrates until this past year. Binkley and Wolfrom (Ohio State University) have shown that Louisiana cane juice contains D-glucose (dextrose) and D-fructose (levulose) in addition to ordinary cane sugar. The chromatographic technique applied in this work may well be of importance in examining the composition of other sugar mixtures which are inherently very difficult to separate by methods previously available.

The gummy material exuded by the mesquite tree is primarily carbohydrate in character. Upon hydrolysis it yields two simple sugars, L-arabinose and D-galactose, and a glucuronic acid. Further studies of mesquite gum by White (University of Idaho) throw further light on the structure of the molecule; the ratio of arabinose to galactose to glucuronic acid was found to be 4:2:1 and it was concluded that an arabinose unit occupies a position at one end of the polymer chain, and the glucuronic acid unit is at the other. The exact manner in which the three building units are linked together is not yet clear but it seems certain that the carbohydrate chain is branched, the side chains being attached through the galactose units.

INSECT REPELLENTS

An important aspect of the protection of members of the armed forces against tropical diseases during the war was the discovery of effective insect repellents and their manufacture on a large scale. The most effective compounds in widespread use were methyl phthalate and 2-hexanediol-1,3. Work in this field has been continued, however, and it was reported recently by Jachowski and Pijoan (Naval Medical Research Institute) that two recently studied compounds, 2-phenylcyclohexanol and β-tetralol are more effective than those in common use as mosquito repellents. A 70-30 mixture of the two compounds was found to be more effective than either one alone. Their effect was enhanced by the presence of a minor amount of oxidation product formed by contact with oxygen of the air. β-Tetralol gave some trouble because of skin reactions, and in searching for a substitute 2-cyclohexylcyclohexanol was found to be even more effective. Preliminary tests indicate that it does not have undesirable effects on the skin.

NEW COMPOUNDS

Progress in chemistry may be measured not only by reasearch papers—just as important and perhaps of more immediate practical value is the announcement that a new compound or a new group of compounds has become commercially available in pilot plant or larger quantity. The end of war demands has permitted many of the chemical companies to devote time to the development of new products, and many of these are being listed as available for the first time. Sodium hydride is an interesting newly available basic material which reacts with a wide variety of acidic compounds to give a sodium salt with liberation of hydrogen. It is also somewhat surprising to see 90 per cent hydrogen peroxide freely available. In addition to the fluorine containing refrigerants already marketed, a new one, chlorodifluoroethane, is now on the market. In the field of nitrogen compounds many previous museum products are now available for consideration. These include long-chain amines such as "stearyldimethylamine," a variety of guanidine derivatives, phenylacetamide, nitrobenzoyl chlorides, and dimethylhydantoin, to mention only a few. With a host of new products becoming available and with chemical production running at a rate of nearly 400 per cent that of 1939, the future of the chemical industry looks promising indeed.

CLASSIFICATION OF ORGANIC COMPOUNDS

For many years organic chemists have classified or grouped carbon compounds by the system used in Beilstein's *Handbuch* or by some minor variation of this scheme. In recent years and particularly during the course of work on projects fostered by the war, the shortcomings of any such method became increasingly evident. The problem arises because efforts are being made in many fields to correlate the structures of organic compounds with a set of biological or physical properties. Since most of the organic compounds now being synthesized for study contain not one but many (perhaps as many as ten) functional groups, no one classification scheme can possibly fill everyone's needs. One investigator may wish to have grouped together all compounds having a particular set of three groups, whereas another scientist in the same laboratory may need for another purpose a classification involving another set of functions leading to quite a different arrangement. What promises to be a useful approach to this problem is to adapt the use of punched cards which can be sorted by International Business Machines. Each card represents a compound which is coded so that each of its important functions is listed. Then the cards can be sorted according to any set of characteristics one may choose. When many thousands of compounds are being dealt with sorting by machine becomes more convenient and quicker than classification by visual inspection. This approach to the handling of data on the hundreds of thousands of organic compounds now known may be the most important step in advancing the science, since the standardization of organic chemistry nomenclature first got under way.

ELECTROCHEMISTRY

By COLIN G. FINK
PROFESSOR, COLUMBIA UNIVERSITY

GENERAL

A review of Electrochemistry for the year 1946 is not merely a review of progress during that year, but is actually a review of certain electrochemical products and processes originating within the last four or five years. A number of the electrochemical advances released for publication during 1946 were discovered or developed during the Second World War. Furthermore, certain electrochemical inventions are still rated as "secret" and will probably not be released for publication within the next five years.

DRY CELLS AND BATTERIES

Ordinary dry cells, such as the flashlight batteries, deliver practically no energy at —40°C. Milton E. Wilke of the Burgess Battery Company discovered that adding lithium chloride to the electrolyte of the cell of the Leclanché type makes the cell operate satisfactorily in locations such as Greenland and Iceland as well as at high altitudes.

The U. S. Bureau of Standards likewise brought forth two types of dry cell that furnish energy satisfactorily at —30°C and below. The one involves an electrolyte comprising an aqueous solution of methylamine hydrochloride and zinc chloride with added ammonium chloride. The other cell has a calcium chloride, zinc chloride, ammonium chloride electrolyte. The addition of calcium chloride produced a cell of remarkably constant voltage.

The U. S. Naval Research Laboratory investigated the silver oxide, zinc cell as to its ability to serve as a high-rate primary battery. It is light in weight and will furnish current at a steady voltage even at high discharge rates. The cell is filled with electrolyte just before using.

A radical departure in electric cells was reported upon by the Bureau of Standards at Washington. Lead dioxide is used as the positive active material and a solution of fluoboric acid or perchloric acid as electrolyte. The cells have an exceptionally good watt-hour capacity and operate satisfactorily at low ambient temperatures such as are encountered in radio sonde operation.

ZIRCONIUM, NEW METAL OF COMMERCE

Zirconium metal is no longer a member of the rare metal class. It is being commercially turned out by the pound. Two widely different methods result in a brilliant white, ductile metal: the iodide method, originating in Holland, and the magnesium reduction method originating in America. The metal is highly resistant to corrosion. It is used in the vacuum tube industry where it serves as a very efficient getter, removing most of the residual gases in the tube. Another valuable property of zirconium metal is the small emission of secondary electrons. In the production of rayon, zirconium is extensively used for the spinnerets.

In the alloy field zirconium has for years been used as an efficient scavenger for steel on account of its high affinity for sulfur, oxygen, and nitrogen. During the year master alloys of zirconium and magnesium were marketed containing from 40 to 60 per cent of zirconium. Ingots six feet long and three feet in diameter were produced.

Of special interest is the new concentrated-arc lamp in which zirconium is the cathode and molybdenum the anode. It was developed by the Western Union Telegraph Company for signal purposes. In nature, zirconium is more abundant than copper or lead or tin.

ELECTROWINNING

The electrowinning of copper, zinc, and manganese are well established industries located at Chuquicamata, Chile, Great Falls, Mont., Knoxville, Tenn., and elsewhere. Semi-commercial tests were made on electrowinning of cobalt and of chromium which seem promising. High grade ores of all metals are being rapidly exhausted, and electrowinning of metals from their ores is particularly inviting in the case of lean ores.

DIELECTRICS

With the development of a wide variety of plastics the question arose in the minds of many whether one or the other of these new plastic products could be industrially applied as electric insulation, in place of rubber, varnish, mica and other old time standards. The Dow-Corning Corporation and the General Electric Company investigated the new plastic products, called silicones, compounds of carbon, hydrogen, and silicon. Various compounds have been isolated. The wide range of their physical properties adapt them to a large number of uses. The liquid silicones have exceptional electric properties. Grease-like silicones are suitable for high temperature lubrication. The silicone varnishes are good insulators that withstand relatively high temperatures. The silicone elastomers are interesting as dielectrics because of their rubbery properties combined with high thermal stability.

FUSED ELECTROLYTES

In the fused electrolyte industry, comprising such products as sodium, aluminum, magnesium, and calcium, the center of attraction was the production of fluorine gas. Interest was greatly stimulated by the findings that Germany had developed, during the war, new cells for the making of fluorine. This gas is the most powerful oxidizing agent we possess and finds wide application in the production of organic compounds.

The coloring or "dyeing" of aluminum has aroused new interest and we may soon see our favorite silk dies decorating a wide variety of aluminum products.

ELECTROPLATING

Chromium plating the inside of gun barrels for wear resistance was widely practiced during the Second World War, both in America and in Europe.

Renewed interest was manifested in the codeposition of tin and copper (speculum, 45 tin, 55 copper). The deposit is hard, wear resistant as well as corrosion resistant. It is not attacked by foods highly acid or by those containing sulfur.

Unexpectedly favorable results were obtained by phosphating (Parkerizing) steel surfaces before electroplating. A decided increase in corrosion resistance resulted and remarkably good adhesion of the plate.

Plating steel strip or wire before fabricating has become an established procedure and we may look forward to a decided reduction in the cost of plated steel parts.

BEARINGS

To meet the ever increasingly exacting demands of the aeroplane builders porous-bearing surfaces were developed which retained the lubricant in most satisfactory fashion. Bearings of aluminum and of chromium plate were particularly successful.

The Koppers Company of Pittsburgh, Penn., published details of a method of preparing piston rings with a porous chromium electroplate. The wear of the cylinders and barrels was reduced by as much as 50 to 80 per cent.

Electrodeposited indium-lead bearings continued in demand. They are very resistant to acids that may occur in lubricating oils. The drawing of aluminum alloys through dies is greatly facilitated by plating the bearing surfaces with indium over lead or tin or silver.

PERIODICAL PUBLICATIONS

American Journal of Physics
57 E. 55th St., New York City.
Chemical and Engineering News
60 East 42nd St., New York City.
Chemical Engineering Catalogue
330 West 42nd Street, New York City.
Chemical Industries
522 Fifth Ave., New York City.
Chemical and Metallurgical Engineering
330 West 42nd Street, New York City.
Chemical Reviews
Mount Royal and Guilford Aves., Baltimore, Md.
Chemist, The
60 E. 42nd St., New York City.

Industrial and Engineering Chemistry
60 E. 42nd Street, New York City.
Journal of the Acoustical Society
57 E. 55th St., New York City.
Journal of the American Chemical Society
Easton, Pa.
Journal of Applied Physics
57 E. 55th St., New York City.
Journal of Chemical Education
500 Fifth Ave., New York City.
Journal of Chemical Physics
57 E. 55th St., New York City.
Journal of Mathematics and Physics
Massachusetts Institute of Technology, Cambridge, Mass.
Journal of the Optical Society
57 E. 55th St., New York City.
Journal of Organic Chemistry
Mount Royal and Guilford Aves., Baltimore, Md.
Journal of Physical Chemistry
Mount Royal and Guilford Aves., Baltimore, Md.
Physical Review
57 E. 55th St., New York City.
Review of Modern Physics
57 E. 55th St., New York City.
Review of Scientific Instruments
57 E. 55th St., New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

American Association of Cereal Chemists, 4049 Pennsylvania Ave., Kansas City, Mo.
American Association of Physics Teachers, Northwestern University, Evanston, Ill.
American Association of Textile Chemists and Colorists, 1 Madison Ave., New York City.
American Ceramic Society, 2525 N. High St., Columbus, O.
American Chemical Society, Inc., 1155 16th St., N.W., Washington, D. C.
American Electrochemical Society, Broadway and 117th St., New York City.
American Institute of Chemical Engineers, 50 E. 41st St., New York City.
American Institute of Physics, 57 E. 55th St., New York City.
American Microscopical Society, Kansas State College, Manhattan, Kan.
American Oil Chemists Society, 509 Poydras St., New Orleans, La.
American Physical Society, Columbia University, New York City.
American Society of Biological Chemists, U. S. Bureau of Agricultural Chemistry and Engineering, Washington, D. C.
American Society of Brewing Chemists, Inc., 64 East Lake St., Chicago.
Association of Official Agricultural Chemists, Box 540 Benjamin Franklin Station, Washington, D. C.
Copper and Brass Research Assn., 420 Lexington Ave., New York City.
National Research Council, 2101 Constitution Ave., Washington, D. C.
Society of Chemical Industry, 305 Washington St., Brooklyn, New York City.
Synthetic Organic Chemical Manufacturers Assn., 6 E. 45th St., New York City.

DIVISION XXII

BIOLOGY

ORGANIC EVOLUTION AND GENETICS

By Myron Gordon
New York Zoological Society

GENETICS OF NATURAL POPULATIONS

Dr. Sewall Wright of the University of Chicago and Dr. Th. Dobzhansky of Columbia University continued their study and analysis of the "Genetics of Natural Populations" and published their results in *Genetics* (31:125-156, 1946). They stated that rapid changes in the genetic composition occur in populations of *Drosophila pseudoobscura* which inhabit certain localities on Mount Jacinto, California. These changes are cyclic and connected with the succession of the year's seasons. Analysis of the data has led to the working hypothesis according to which the changes in the relative frequencies of the gene arrangements are induced by natural selection in response to the seasonal alterations in the environment. The gene arrangements may be in themselves adaptively neutral (that is, free from position effects), but they contain different gene complexes which make their carriers adapted to different seasonal environments. Since the changes in the composition of the populations are considerable and rapid, the chromosomal types concerned must be subject to intense selection pressures. The selective advantages and disadvantages that must be postulated are, indeed, high enough to justify an attempt to detect them in laboratory experiments.

From many elaborate tests, they concluded that the experimental results demonstrate clearly that there may be selective differences between chromosome types derived from the same locality and that these may be of such a nature as to result in the indefinite persistence of several types in such a locality. The marked rise in frequency of Standard and decrease of Chiricahua in summer, observed to occur in nature in the locality from which the flies were collected, is analogous to the experimental reaction in high temperature, and it is tempting to compare the lack of change in artificial population at 16.5° with the constancy observed in the natural ones during fall and winter. The changes which occur in nature during spring (the reverse of those in summer), however, have not been reproduced in the population cages. Mass migration at this time from the population high in the mountains would explain the results qualitatively, but it would be difficult to reconcile this with the results of earlier experiments on the rate of dispersion of the flies in nature. It appears that there are important factors yet to be discovered.

In another paper on the "Genetics of Natural Populations," Dr. Th. Dobzhansky indicated that species of Drosophila show little variability as insect species go. Apart from a size variation which is mostly environment, individuals that compose natural populations are as a rule uniform in appearance. Notwithstanding this external uniformity, natural populations of Drosophila contain a great store of genetic variants. The principal components of this store are recessive autosomal genes which, when homozygous modify the viability, development rate, fertility, and other properties of their carriers. These genes are present in the populations mostly concealed in heterozygous condition.

The concealed recessive variants are detected with the aid of experimental procedures, the essential part of which is obtaining individuals homozygous for chromosomes or chromosome sections which were carried in wild individuals in heterozygous state. Homozygotes display in their phenotype the effects of the recessive that were hidden in heterozygotes. The most frequently used version of this technique consists in crossing wild flies to laboratory strains which have some chromosomes marked by appropriate mutant genes and inverted sections. Flies are eventually obtained which carry a certain wild chromosome in duplicate, while the sibs of these flies carry the same chromosome only once. Comparison of the homozygotes and heterozygotes for the chromosome permits the detection of any recessive factors which this chromosome may carry.

It is evident that the above technique reveals only the net effects of homozygosis for whole chromosomes. How many genes may be involved in the production of these effects is not immediately apparent. Suppose, for example, that the homozygotes for a certain wild chromosome have a lower viability, a slower development rate, and some visible morphological peculiarity not present in their heterozygous sibs (such diversified effects of homozygosis for wild chromosomes are frequently met with in the actual experiments). What is the genetic basis of these changes? It is possible that the chromosome in question contains a gene for the low viability, another gene for the slow development, and still another for the morphological change. It is likewise possible that this chromosome carries a single gene with manifold effects responsible for the whole complex of characters. Finally, several or many genes may be involved in the production of each character, some of these genes having manifold effects and others apparently restricted fields of action. Experiments described in this article have been devised to discriminate between these possibilities. The importance of this problem from the standpoint of population genetics is considerable. The amount of potential variability stored in natural populations will be much greater if the properties of wild chromosomes are determined by multiple genes than if they depend upon single genes or very few genes. The amount of variability potentially available to the species determines its evolutionary plasticity. In the present experiments, the gene contents of three wild second chromosomes of *Drosophila pseudoobscura* from Mount San Jacinto, California, have been analyzed. It can be shown that these chromosomes carry complexes of genes which are capable of giving rise to a large amount of variability by recombination.

Dr. John A. Moore of Barnard College, Columbia University, reported a case of "Incipient intraspecific isolating mechanisms in Rana ripiens" (*Genetics* 31:304-326, 1946). The common green frog, *R. pipiens* from many localities has been used in intraspecific hybridization experiments. These localities can be arranged in a series that reflects the results of these experiments: (1) Vermont (and Wisconsin), (2) New Jersey, (3) Louisiana, (4) central Florida, (5) southern Florida, (6) Texas. This series also corresponds to the decreasing latitude of the localities, except for Texas. Hybrids between adjacent members of the series are normal or nearly normal in rate of development and morphology. In hybrids between progressively more distant members of the series, there is a retardation in rate of development, and morphological defects become pronounced. Crosses between the end members of the series result in a high degree of hybrid inviability. The types of morphological defects follow certain definite patterns. Hybrids derived from northern eggs (or from females from localities low in the series) and southern sperm (or from males from localities high in the series) have enlarged heads and circulatory system defects. Hybrids derived from southern eggs (or from females from localities high in the series) and northern sperm (or from individuals from localities low in the series) have reduced heads with fusion of suckers, fusion of olfactory pits, absence of mouth, and eye abnormalities. It is thought that evolution in this case involves the synthesis, through the action of natural selection of adaptive genomes which can incidentally act to isolate the populations in which they occur. These isolating mechanisms arise, therefore, as a byproduct of adaptation.

Dr. D. U. Gerstel of the Division of Genetics of the University of California at Berkeley summarized his study of "Inheritance in Nicotiana tabacum" with especial reference to the mechanism of chromosome substitution which appeared in *Genetics* (31, 421-427, 1946) as follows: The transfer of genes from one species to another frequently is impossible because of failure of the chromosomes to conjugate and to cross over in the hybrid. Substitution of a pair of chromosomes, where feasible, is a means of overcoming this difficulty. Such substitution may occur in plants which have one or more *N. glutinosa* chromosomes in addition to two full sets of *N. Tabacum* chromosomes. In these plants meiotic irregularities such as nonconjunction between the members of a *Tabacum* pair or trivalent formation between a tobacco pair and a *glutinosa* univalent may result in the production of sporocytes containing only 23 chromosomes of tobacco, besides one or more *N. glutinosa* chromosomes. A homologous *N. glutinosa* chromosome may then take the place of a tobacco chromosome. The causative irregularities may be observed in the meiosis of trisomic plants with 24 pairs of tobacco and a single *N. glutinosa* chromosome, and their occurrence has been demonstrated indirectly from the metaphase configurations of a family of plants derived from a pentaploid with the constitution of 24 *N. Tabacum* pairs and 12 *N. glutinosa* univalents. Two cases of accomplished substitutions were shown to have their origin in the megasporogenesis of pentaploid plants.

PRODUCTION OF GERMINAL MUTATIONS CHEMICALLY

Under the title of "Genetic analysis of the induction of tumors by methylcholanthrene. IX. Induced and spontaneous adenocarcinomas of the stomach of mice," Dr. Leonell C. Strong of Yale University School of Medicine described in the *Journal of the National Cancer Institute* (*5*:339-356, 1945, 231) pathologic lesions which were obtained in the pyloric part of the stomach of mice following the subcutaneous injection of 1 mg. of methylcholanthrene dissolved in 0.1 ml. of sesame oil, when the mice were 60 days old. Of these 186 were adenocarcinomas, 19 were adenomas, and 26 were adenomatous hyperplasias. These gastric tumors occurred singly or in association either with malignant changes in the forestomach or with malignant changes in other parts of the body (locally appearing epidermoid carcinoma or fibrosarcoma and adenoma or adenocarcinoma or bronchiogenic carcinoma of the lungs). The gastric tumors appeared in strain NHO mice only after the early appearing local tumors were partially suppressed or completely inhibited by genetic selection toward resistance. The untreated descendants of the mice developing adenocarcinoma of the stomach after the subcutaneous injection of methylcholanthrene continue to develop this lesion spontaneously. The action of methylcholanthrene may be: (1) The conversion of gastric mucosa in cancer; (2) the production of a germinal mutation in a genetic entity.

Dr. C. Auerbach and Dr. J. M. Robson of the University of Edinburgh, Scotland, claimed (*Nature 157:* 302, 1946, "Chemical Production of Mutation") that mutations have been produced in Drosophila by mustard gas at rates comparable to those from X-rays. These include sex-linked lethals with rates up to 24 per cent, visibles in which in treated males the per cent of fractionals was 30-50 per cent higher than with X-rays, and chromosome rearrangements (at a lower rate relative to sex-linked lethals than with X-rays). The mutagenic action appears to be exercised directly on the chromosomes, they stated.

POLYPLOIDY AND ANIMAL EVOLUTION

In response to several investigators' suggestion that in view of the enormous number of polyploid species and varieties which are now known in plants the hypothesis that something of the same kind may have occurred, although less frequently, in the evolution of the Metazoa, Professor M. J. D. White of University College, London, England, writing in the *American Naturalist* (80:610-618, 1946), made his reply in a paper entitled: "The Evidence Against Polyploidy in Sexually-Reproducing Animals." His remarks may be summarized as follows: One can say that, apart from species with obligatory or facultative parthenogensis the highly anomalous case of the Cecidomyidae and a somewhat doubtful instance in the Coccidae insects, the evidence for polyploidy in the bisexual species of animals is so equivocal that it must seriously be doubted if any such polyploid species exist. Even in the hermaphrodite groups polyploidy seems to be extraordinarily rare (far more so than in most groups of higher plants). This is possibly due to the rarity of self-fertilization in animals (a single tetraploid individual mating with a diploid would produce only triploid offspring which would be sterile on account of irregular meiosis). Apart from this there is the possibility that the nuclear cytoplasmic volume relationships have a smaller degree of tolerance in animals than in plants.

HETEROSIS

Dr. John W. Gowen, Janice Stadler, and Dr. Leslie E. Johnson, writing in the *American Naturalist* (80:506-531, 1946) on the subject of the mechanism of heterosis, concluded from their study of vigor in races, and the inbred and outcrossed "homozygous" lines from them that inbred from continued brother by sister pair matings may retain some of their genes in heterozygous condition over many generations. "Homozygous" lines, formed by outcrossing, in general show lower yields than the inbreds from which they originated. This observation would agree with the hypothesis that the cause of hybrid vigor lies in differences in genic interaction between alleles and their reaction products. This result would not be expected if the cause of hybrid vigor lay in some, as yet unidentified, physiological stimulation resulting from the union of unlike gametes.

Dr. Wesley R. Coe reported upon "a resurgent population of the California bay mussel (Mytilus edulis diegensis)" in the *Journal of Morphology* (78:85-101, 1946). He claimed that during the past three years the above species has appeared on the coast of California in unprecedented numbers and over a widely extended territory. It is not limited to bays and inlets but is abundant also on the open coast. This exuberant population consists of a race of unusual vigor, with rapid growth of its constituent members to a larger size than is usual in that subspecies, with a high rate of multiplication and the establishment of flourishing colonies at distant localities and in situations unfavorable for long survival. It is suggested that some of the individuals responsible for this population may have been brought as free swimming larvae to the place of resurgence by the coastal ocean currents. The fortuitous union of two physiologically diverse but compatible genetic strains, together with exceptionally favorable environmental conditions, may, perhaps, have been the principal contributing agencies in the establishment of this population which has been so rapid. Examples of similar resurgent populations of pelecypods on the Pacific coast are reported.

MORPHOLOGY AND EVOLUTION

Prof. A. S. Romer of Harvard University wrote "The Early Evolution of

Fishes" which was published in the *Quarterly Review of Biology* (21:33-69, 1946). Dr. William K. Gregory of the American Museum of Natural History and Columbia University wrote "The Role of Motile Larvae and Fixed Adults in the Origin of the Vertebrates" in the same journal (21: 348-364, 1946).

"The Early History of the Idea of the Inheritance of Acquired Characters and of Pangenesis" was prepared by Conway Zirkle whose papers on this subject were reviewed in THE AMERICAN YEAR BOOK previously. This summation was published as volume 35 (part 2) of the new series of the *Transactions of the American Philosophical Society* (91-151, 1946).

MAINTENANCE OF PURE GENETIC STOCKS

At a meeting of the Committee on Plant and Animal Stocks of the National Research Council, held at Storrs, Conn., the following resolution was adopted: Resolved that the Committee on Plant and Animal Stocks believes that a definite threat to future advance in plant and animal improvement exists in the losses of essential genetic stocks that have occurred and are likely to occur from lack of adequate facilities for their preservation, and be it further Resolved that to insure further advances in the fields of bacteriology, pathology, physiology, genetics, and plant and animal breeding dependent on such material, steps should be taken to provide facilities for preserving basic genetic stocks, and be it further Resolved that in recognition of the fundamental importance of this problem in all fields of biological sciences in relation to human welfare, the Committee recommends to the National Research Council such steps as may be deemed necessary to insure safeguarding of this scientific trust, either through the Committee or otherwise. This resolution was submitted to the Agricultural Board for adoption. Subsequently the Committee on Plant and Animal Stocks was made a permanent part of the Agricultural Board.

In a specific proposal five groups of stocks were listed as important for preservation: 1. Species and subspecies; 2. Leading commercial varieties; 3. Varieties which in the opinion of the specialists are of value in plant-breeding, *e. g.*, varieties which are resistant to specific diseases; 4. Stocks of known genetic composition (mutants). New types are to be added regularly to each of these categories. It was pointed out that in many parts of the world, *e. g.*, the U.S.S.R., China, and South America, there is imminent danger that primitive varieties of crop plants will be wiped out by the introduction of improved stocks. Since the primitive varieties may contain many factors which are of great value for improvement and research purposes, it is imperative that they should be collected before it is too late or, wherever possible, maintained in their natural habitat.

A conference on mutations was called by the Committee on Growth of the National Research Council on Jan. 26, 27, 28, 1946 in New York City. The primary purpose of this Conference was to bring together research workers for a discussion of current problems concerning mutations. The scope of the Conference is indicated by the following papers listed by groups:

Spontaneous Mutations: Muller, H. J.: Problems in spontaneous mutation; Sturtevant, A. H.: Spontaneous mutation in Drosophila; Delbruck, M.: Studies of bacterial mutability with the aid of bacterial viruses; Ryan, Francis J.: Back-mutation and adaptation in Neurospora; Stadler, L. J.: Spontaneous mutation and gene variability in maize; Rhoades, M. M.: Influence of heterochromatin on mutation in maize.

Induced Mutations: Stadler, L. J.: The rarity of gene mutations induced by X-rays; Oliver, C. P.: The need to consider modifiers and manifold effects of a gene in the search for mutations; Snell, G. D.: Methods for the study of mutations in transplantable tumors; Demerec, M.: Mutations in *Escherichia coli* induced by ultraviolet and by X-rays; Delbruck, M.: An induced specific mutation of a bacterial virus.

Extranuclear Factors in Heredity: Rhoades, M. M.: Plastid inheritance; Lindegren, C. C.: Activation and inhibition of a gene or its cytogene; Spiegelman, S.: Determining factors in the synthesis of enzymes. Sonneborn, T. M.: Current work on cytoplasmic factors in Paramecium. Heston, W. E.: The milk factor in mammary cancer mice.

The Nature of Genic Action: Stern Curt: Effects of combinations of alleles in normal and changed positions; Oliver, C. P.: A study of gene action as determined by analyses of alleles of lozenge; Schultz, Jack: Somatic pairing and the position effect; Irwin, M. R.: Aspects of the nature of genetic action; Horowitz, N. H.: Gene action in Neurospora; Spiegelman, S.: Energy specificity and the mechanism of the control of enzymatic constitution.

Genetic Aspects of Atypical Growth: Heston, W. E.: Inheritance of susceptibility to tumor formation; Gordon, Myron: Genetic aspects of atypical growth of pigment-bearing cells leading to melanoma; Kidd, J.: The nature of a distinctive constituent of Brown-Pearce tumor cells; Jones, D. F.: Growth changes in maize endosperm.

Present Concept of Physical Nature of Genic Substances: Muller, H. J.: Some aspects of the gene as viewed by a mutationist; Schultz, J.: Heterochromatin; Mirsky, A. E.: Chemical constitution of chromosomes.

This Conference is evidence that geneticists are aware of the problem of cancer. From funds made available to them by the American Cancer Society, many of them are engaged in research in the fundamental properties of cellular growth in the normal and atypical phases.

SEXUAL ISOLATING MECHANISMS

Dr. Ernst Mayr of the American Museum of Natural History described his "Experiments on Sexual Isolation in Drosophila" in the eighth of a series of such studies under the subtitle "The nature of the isolating mechanisms between Drosophila pseudoobscura and Drosophila persimilis" in the *Proceedings of the National Academy of Sciences* (32:128-137, 1946). Dr. Mayr stated that the two species of fruit flies live in the same area yet under natural conditions they do not hybridize, yet under laboratory conditions they may be induced to do so. Dr. Mayr found that there were no apparent differences in mating behavior other than the greater activity of the *pseudoobscura* species. Yet when given choices in their mating partners the species mated with their own kind far more often than with the unlike species. When matings were successful with opposite species, the females receiving the sperms apparently terminated the copulatory act far sooner than when copulation took place with like species. This differential in copulation duration may account for the success or failure of copulation to eventuate in fertilization and the production of broods. This barrier prevents the occurrence of many hybrid forms in nature should, by chance, matings between the species take place.

George Streisinger of Cornell University studied three remarkably similar species of Drosophila belonging to the Cardini species group: *Drosophila cardinoides* Dobzhansky and Pavan from Iporanga and from Mogi das Cruzes, State of São Paulo, from Teffe, State of Amazonas, from Belem, State of Para, in Brazil, and from Guatemala in Central America. *Drosophila polymorpha* Dobzhansky and Pavan came from Bertioga and from Araras, State of São Paulo, Brazil. *Drosophila neocardini* Streisinger came from Teffe, Amazonas, Brazil. At first these species seemed alike but morphological differences were found to separate them including distinct structures of the male genitalia, but the most convincing and conclusive method of classification proved to be their behavior in crosses. The species showed very strong psychological or sexual isolation. Interspecific mating occasionally occurred but in no case were offspring produced.

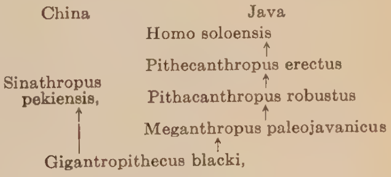
A study on "Antigens, Antibodies and Genes" was made by Prof. M. R. Irwin of the University of Wisconsin and published in *Biological Reviews* (21:93-100, 1946). This study reviewed the finding about antigenes as they occurred in one species of bacteria, the pneumococcus, and in the cells and organs of mammals and birds. The finding in immunolochemistry that substances simpler than proteins, if linked to proteins, may produce biological specificity in bacteria, points the way, Dr. Irwin stated, to a comparable concept of specificity in other organisms. He called attention to the transformation of types in the pneumococci, and to the activating principle, a nucleic acid, in one such change. He reviewed the antigens of the red blood cells in man and he referred to the antigenic relationships of species of birds which produce fertile hybrids and backcross hybrids. From such studies he analyzed the genetic relationships in terms of their cells and serums. Many genes affect the antigenic complex of the red blood cells, some of which acted more or less directly so that each produced a particular antigen. Others were capable of effecting the same combination that two or more alleles produced, and he cited instances of cellular substances which are the result of the complementary action of genes.

Dr. Stanley E. Flanders of the University of California Citrus Experiment Station at Riverside described in *Science* (103:555-556, 1946), "Haploidy as a Factor in the Polymorphic Differentiation of the Hymenoptera." Haploid, he declared, is lethal in many species which are disinclined to oviposit before mating. Polymorphic individuals in species in which differentiation is detected by the partial absorption of the ripe ovarian egg should be more strongly differentiated than the queen bee and the worker and less so than the alternating generations of certain gall wasps. The absorptive process has a graduated effect on eggs. In social species the low incidence of male polymorphism may result from the mortality of the partially absorbed unfertilized egg or the small nutritional needs of haploid individuals.

Prof. E. Newton Harvey in a paper entitled "Can the Sex of Mammalian Offspring Be Controlled?" published in the *Journal of Heredity* (37:71-73, 1946), suggested that it might be possible to separate male producing and female producing sperm by centrifuging seminal fluid in a density gradient of dextrin-Ringer solution. The female producing sperm, containing excess chromating in the X-chromosome, is calculated to have a slightly greater density than the male producing Y sperm. The two types of sperm would, therefore, form separate layers in a sedimentation equilibrium. However, the density difference of X and Y sperm, based on estimation of chromosome density and volume, is so slight that accurate temperature control would be necessary; the separation could only succeed, he claimed, in vacuum type of turbine centrifuge used in sedimentation of larger molecules.

BOOKS

Franz Weidenreich was the author of *Apes, Giants and Man* (Univ. of Chicago Press). It contains 122 pages, six maps and 78 figures. The book first discusses man's anthropoid ancestry and the specialization in long bones, axial skeleton, and craniovertebral relationships attendant upon the assumption of the upright position. The author outlines the evolutionary sequence of the recent fossil hominid discoveries in Java and China as follows:



In a chapter on human origins, Weidenreich traces modern man back to the first hominid stages and disputes modern claims to "racial mentality."

J. E. Nichols of the Imperial Bureau of Animal Breeding and Genetics of Edinburgh, Scotland, wrote *Livestock Improvement in Relation to Heredity and Environment*. This was published by Oliver and Boyd and consists of 208 pages, seven plates, and 24 figures. There is a concise statement and explanation of the laws of heredity; the application of these laws to the problems of selection, inbreeding, crossbreeding and the building of new breeds. The author places special emphasis on the role of environment and shows that different effects may be brought about in two animals of the same genotype. The book has an extensive bibliography.

"Animal Cytology and Evolution" by M. J. D. White was published by the Cambridge University Press (Macmillan) in the latter part of 1945; it consists of 375 pages and covers the following subjects: the nature of the evolutionary process, the structure of mitotic chromosomes, salivary-gland chromosomes, the mechanisms of structural rearrangements, meiosis chromosomal evolution in wild populations, the evolution of chromosomal numbers and forms, the evolution of meiosis and chromosome cycles, hybridization and the causes of hybrid sterility, the evolution of the sex-determining mechanism, sex-determination by male haploidy, the evolution of parthenogenesis and in the final chapter, cytology and evolutionary patterns. Dr. White's object in presenting the enormous number of cases which he analyzes is to discuss the bearing of animal cytology upon the problem of the mechanism and process of evolution.

ENTOMOLOGY

ROGER B. FRIEND
CONNECTICUT STATE ENTOMOLOGIST

GENERAL

The pursuit of insecticidal research continues to dominate the field of entomology, embracing not only the expansion of investigations centered around DDT, but also the search for other insecticides better than DDT or at least useful where DDT fails. It also enters into certain fields of pest control where the use of insecticides has been heretofore impracticable.

Much of the recently acquired information in this field, both published and unpublished, has been summarized in 12 Abstract Bulletins issued by the Insect and Rodent Control Committee Coordination Center of the National Research Council, the outgrowth from a war emergency organization. In 1946 the Committee was succeeded by the Advisory Committee of the Chemical-Biological Coordination Center set up by the National Research Council. The organization of this Advisory Committee revolves around the application of chemistry, physics, and biology to health and agriculture. Entomology is one of those fields, and there is a subcommittee of entomologists. One of its current activities is the chemical and biological codification and screening of chemical compounds. This is of great importance to entomological research, particularly as it concerns insect physiology and insecticides.

DDT DEVELOPMENT

DDT has developed into a powerful weapon for controlling insect pests of man and of domesticated animals because of its direct action on larval and adult forms and its residual action. For the control of flies, including mosquitoes, it has become invaluable. Many governmental agencies, Federal and state, have carried out extensive investigation in the field of mosquito control with this and other insecticides. A dose of only 0.1 pound per acre in the form of an emulsion will control mosquito larvae, and three quarts per acre of a 5 per cent solution will control adults in forests for two or three days. When applied at the rate of 1 part per million to water used to irrigate rice fields, effective control of the larvae of *Aedes* and *Psorophora* was obtained. The effect of DDT may be modified by changes in pH of the water or by variations in the content of organic matter. TDE (1,1-dichloro-2,2-bis(p-chlorophenyl) ethane), a compound related to DDT, has been found equal to DDT for controlling the larvae of certain species. Federal laboratories have tested several thousand chemical compounds against *Anopheles* larvae, and some of them show some promise.

FLY AND MOSQUITO CONTROL

Under certain conditions fish exert considerable control of mosquito larvae, and the literature on this subject published from 1917 through 1942 has been reviewed by Gerberich (*Amer. Midl. Nat.* 36, 1946). Some 216 species of fish have been used in controlling 35 species of mosquitoes.

Blackflies (*Simulium* app.) are serious blood sucking pests which breed in running water and hence have been difficult to control in the larval stage. It appears that certain species, at least, can be eradicated by applying DDT to the water at as low a dose as one part in 10 million.

In the control of mosquitoes, forest insect pests, and other insects inhabiting wild areas there is some danger to other animal species, both terrestrial and aquatic. However, at the doses necessary to kill pests, less than 0.5 pound per acre on water and one pound per acre on land, there appears to be little danger of disastrous results.

DOMESTICATED ANIMAL AND HOUSE PESTS

The production of meat and milk is markedly affected by the activities of pests of domesticated animals. In experiments carried out in Kansas it was found that a DDT spray applied to cattle effectively controlled horn flies and the sprayed animals gained weight more rapidly than those not treated. The application of one pound of DDT produced over 1,200 pounds of beef. Spraying dairy barns effectively controls flies. Applications of DDT are also effective in controlling the Gulf Coast tick, the winter horse tick, and lice affecting poultry, as well as other animal pests. There is no danger to the animals if the insecticide is properly used.

For the control of pests of the household, stored products, etc., this insecticide is very useful. Houseflies, bedbugs, roaches, silverfish, booklice, carpet beetles, seed pests, hide beetles, dog and cat fleas are among those successfully combatted.

POTATO PESTS

DDT has been used to control many pests of agricultural crops, and of particular interest is its effectiveness against pests of potatoes and alfalfa. The most serious pests of potatoes over the country as a whole are flea beetles, leafhoppers, and aphids, all of which DDT controls. The extraordinarily high potato yields obtained in 1946, with a resulting bumper crop, were in part owing to the widespread use of this insecticide.

THE LYGUS AND ALFALFA

The alfalfa seed production in many parts of this country has fallen rapidly in the last 20 years. There are two entomological problems involved, the injury to alfalfa by sucking bugs, mainly of the genus *Lygus*, and the pollination of blossoms by several insect species. The situation in Utah, ably described by Sorenson (5th Am. Fac. Res. Lecture, Utah State Agric. Coll.) illustrates the nature and magnitude of the problem. About one-third of the cultivated 1,361,263 acres in Utah and 38.43 per cent of all the irrigated land in the state are devoted to alfalfa production. During the ten-year period 1936-1945, 34,500 acres of this produced a seed crop. Seed production averaged 4.93 bushels per acre in 1920 to 1924 and reached a peak of 6.37 bushels in 1925. Since then it has declined steadily to about 1.00 bushel in 1945. *Lygus* feeding blasts the buds, renders seed worthless, and reduces the vegetative growth. These bugs are abundant in alfalfa fields.

Treatment with DDT has resulted in a decrease in the population of bugs and a significant increase in yield of seed. In the best plot, treated with 5 per cent DDT in 1945, the treated field yielded 6.48 times the untreated check. Carlson and Lieberman (*Jour. Amer. Soc. Agron.* 38, 1946) also reported a significant increase in seed production following treatment for *Lygus.* Lieberman stated the DDT residue on the alfalfa following threshing was, in his experiment, 10 p.p.m. and before threshing 17 p.p.m. This must be considered in relation to the effect on live stock fed alfalfa. The median lethal dose of DDT is over 300 mg. per kilogram of body weight for cows and horses (see Bishopp, *Amer. Journ. Publ. Health* 36, 1946). According to Appleman and Sears (*Jour. Amer. Soc. Agron.* 38, 1946) 10 per cent DDT dust did not inhibit the growth of alfalfa at less than 100 pounds DDT per acre, nor did it reduce root nodulation at less than 1000 pounds per acre. Although all problems involved in the use of DDT to protect alfalfa are not answered to date, a promising insecticide is now available.

In order to obtain the maximum amount of alfalfa seed, it is necessary to secure adequate pollination, and this pollination involves tripping of alfalfa blossoms. According to Tysdal (*Amer. Jour. Agron.* 38) less than 5 per cent of alfalfa flowers in Nebraska set seed without tripping, and there are in this region at present an insufficient number of insect trippers in all fields. Carlson (*Ibid.*) found in Utah that, where pollinators were excluded by caging, only 10 to 17 pounds of seed were produced per acre, whereas under open pollination 154 to 254 pounds of seed per acre were produced. According to Vansell and Todd (*Ibid.*), bees are the chief agents in alfalfa pollination in Utah. Bees, however, may prefer the blossoms of plants other than alfalfa, and, if such plants are available, the alfalfa may be neglected. The important species working in alfalfa flowers are, aside from honey bees, certain native wild bees. The production of 500 pounds of alfalfa seed per acre necessitates the tripping of 38,000,000 flowers. Tripping insects are usually insufficient in numbers to accomplish this. In California, according to Lindsley (*Jour. Econ. Ent.* 39), the only significant pollinators of alfalfa appear to be bees, as no other insects deliberately trip the flowers. Wild bees, of which many species were found tripping alfalfa in different parts of the state, accomplished the major portion of pollinating this plant. Honey bees compared unfavorably with wild bees in both percentage and total number of pollen collectors.

DDT FORMULA INVESTIGATIONS

The investigations into the formulation of DDT have been vigorously pursued. One of the problems involved is the persistence of sprays under exposure to normal conditions in the region involved. According to Lindquist (*Jour. Econ. Ent.* 39), both ultra violet light and sunlight reduce the toxicity of DDT to houseflies. With high-boiling auxiliary solvents, this reduction is particularly severe. Use of a solvent for DDT residual sprays should be of the boiling range of kerosene. Goodhue, Fales *et al.*, Donovan, Lindquist *et al.*, Jones *et al.*, and Gersdorff (*Soap and Sanitary Chemicals,* 22) have discussed tests for evaluating the formulae of aerosols, the insecticidal value of the constituents, particle size, and the relative merits of DDT household sprays. One of the interesting developments in the utilization of DDT has been the impregnation of a fuse with this insecticide. The smoke generated by burning these fuses is toxic to insects (Pearsall and Wallace, *Soap and Sanitary Chemicals,* Vol. 22).

OTHER INSECTICIDE COMPOUNDS

Among the interesting insecticides other than DDT, about which certain information was published during the year, are compounds of diverse formulae and origin. The Department of Economic Entomology of the University of Wisconsin has recently compiled the information concerning the recent insecticidal tests of Sabadilla on a great many pests of diverse nature. Kearns and Ingle (*Jour. Econ. Ent.* 38) have discussed the toxicity of a chlorinated hydrocarbon insecticide of the empirical formula $C_{10}H_6Cl_8$ which appears to be promising for the control of many insect pests. Yun-Pei (Cornell University) has reported a series of tests which indicate that a compound consisting mainly of di- and tri-methyl naphthalene used as an extender in dusts increases the toxicity of rotenone and DDT to all of the 14 species tested and decreases aphid reproduction. Azobenzene has recently been developed as an insecticide of particular use for fumigating in greenhouses, as reported by Haring (*Jour. Ec. Ent.* 39). Benzene hexachloride, also known as hexachlorocyclohexane, has been found by several investigators to be very toxic to housefly larvae, certain bugs on cotton, particularly the cotton flea hopper, the tarnished plant bug and stinkbug, and some other insects. Tests of the usefulness of Ryania (a tropical plant), Rothane (also known as DDD and TDE) very similar to DDT in composition, the methoxy analog of DDT, the bromine and fluorine analogs of DDT, certain sulfones, the hexaethyl ester of tetraphosphoric acid, certain nitriles and dinitro compounds, benzyl benzoate, and hydroxypentamethylflaven have been carried out. (*Journal of Economic Entomology,* Vol. 38).

BIOLOGY OF MOSQUITOES

Certain information has been acquired regarding the biology of mosquitoes which is of great interest. The seasonal variations in certain species of *Culex* has been discussed by Michener (*Jour. N. Y. Ent. Soc.* 53). Jenkins and Carpenter (*Eccl. Monographs,* 16) have discussed the ecology of tree-hole breeding mosquitoes of Nearctic North America. There are eight species and one sub-species, of which all but three are widely distributed in the deciduous forests in eastern North America. Carpenter, *et al.* (*Amer. Mid. Nat. Monograph* No. 3) have published an excellent general treatise on the mosquitoes of southern United States, east of Oklahoma and Texas. This includes chapters on bionomics and relation to disease, techniques, morphological characters used in identification, taxonomy and distribution of the species. Gjullin (*Wash. Ent. Soc.* 48) has published a key to the *Aedes* females of North America.

Folger (*Physiol. Zool.* 19) has written a very interesting paper on the reactions of *Culex* larvae and pupae to gravity, light, and mechanical shock. Shock is a kinetic stimulus inducing movement. Gravity is a directive stimulus determining direction, whereas light acts in both ways. The larvae react to light intensity from above and below, but more strongly to light from above. Their position, that is, whether they are at the surface or at the bottom, influences the negative or positive reaction to light and gravity as well as shock.

Hovanitz (*Physiol. Zool.* 19) has published an interesting comparison of the mating behavior, growth rate, and factors influencing egg hatching in South American Hemagogus mosquitoes, these species being involved in the transmission of yellow fever in the forests of tropical America. Hovanitz deals particularly with the area of space needed for mating in dance, mating in flight or at rest, the type and frequency of egg laying, and the environmental influences on the female which affect the hatching of eggs.

INSECTS AND PLANT DISEASE

In regard to insect diseases and the general subject of injuriousness of insects to plants and insect nutrition, several publications are of interest. Steinhaus' excellent book entitled *Insect Microbiology,* deals with the association between insects and microbes, that is, extracellular bacteria, symbiotes, richettsiae, yeasts, fungi, viruses, spirochetes, protozoa, immunity in insects, etc. Beard has recently published a bulletin (*Conn. Agric. Expt. Sta.* No. 491) dealing with the biological aspects of the milky disease of the Japanese beetle. Jensen (*Proceedings of the Hawaiian Entomological Soc.,* Vol. 12) has discussed the virus diseases of plants and their insect vectors in Hawaii taking up the insect species known to transmit these viruses and the plant virus diseases known to occur in Hawaii with special reference to their transmission by insects. There are a number of these viruses in the island, many of which are of great economic significance.

Brett *et al.* have written an interesting paper on the cotton flea hopper in Oklahoma (*Oklahoma Agric. Expt. Sta. Technical Bul. No. T-24*). The injury to the fruiting buds or "squares" results from toxicity of the material injected into the plants by the insect and not from a virus-caused disease. The activity of this insect is responsible for the shedding of a high percentage of "squares." The results of tests made with the object of controlling this species are given, and, as in the case of *Lygus* bugs, DDT has proved effective.

FOOD HABITS OF INSECTS

Brues has published a very interesting volume called *Insect Dietary* (Harvard Univ. Press), in which he deals with the food habits of insects, the relation to structure and environment, the various forms of food utilized by insects and the methods of obtaining such food, and the role of insects as food for man and other organisms.

Hill (*Nebr. Agric. Expt. Sta. Bul. 143*) has discussed the influence of food plants on fecundity, larval development, and abundance of the tuber flea beetle in Nebraska. The type of food plants markedly affects oviposition and length of adult life. Potato foliage was found to be the most satisfactory food, giving highest egg production and lowest mortality.

TAXONOMY

Taxonomy is an old field of scientific endeavor and basic in biological research. Gregg (*Amer. Midl. Nat. 35*) has discussed the ants of northeastern Minnesota, of which there are about 40 species. Cresson (*Trans. Amer. Ent. Soc. 71*) has published a systematic annotated arrangement of the Neotropical Ephydridae (Diptera), and Johannsen (*Jour. N. Y. Ent. Soc. 54*) has revised the North American species of the genus Pentaneura (Tendipedidae: Chironomidae, Diptera). Dillon and Dillon (*Reading Public Mus. and Art Gallery Scient. Publ. 6*) have published Part II of their work on the Cerambycidae, the first part having been published in 1945. Blackwelder (*U. S. Nat. Mus. Bul. 185*) has compiled a checklist of the Coleopterous insects of Mexico, Central America, the West Indies and South America, of which Part IV was published during the year.

Chapin (*Smithsonian Misc. Collections* Vol. 106, No. 11) has written a review of the new world species of *Hippodamia* Dejean (Coleoptera: Coccinellidae). Benesh has revised the genus *Platycerus* (Lucanidae) (*Trans. Amer. Ent. Soc. 72*) as it occurs in the Holarctic regions. De la Torre-Bueno (*Entomologica Americana 26*) has continued his synopsis of the Hemiptera-Heteroptera of America north of Mexico. The genus *Corythuca* is of considerable interest to entomologists, both economically and otherwise, and the members of this genus of bugs are the subject of a monograph by Hurd (*Iowa State Col. J. Sci. 20*). Banks (*Psyche 52*) in his review of the Chrysopidae of Central America includes keys to genera and species and descriptions of other new species. Hanson (*Amer. Midl. Nat. 35*) has discussed the comparative morphology and taxonomy of the Capnidae (Plecoptera).

ECOLOGY OF INSECT POPULATION IN FORESTS

There is increasing interest about the ecology of the population of insects in forested areas, including those which inhabit the soil and the litter resting above it. Cole has studied the cryptozoan fauna of Illinois woodland (*Ecol. Monog. 16*). Most of these small organisms are poorly adapted for digging, very sensitive to dryness and omnivorous. They live in the litter in forests immediately above the soil, and Cole found them to consist mainly of spiders, centipedes, collembola, crickets, roaches, beetles, and ants. Most species reach maximum abundance where the forest is protected from grazing cattle, which is probably a result of the effect of close grazing on humidity. The animals are more abundant in the wet weather of early autumn, and the fauna changes early in autumn when immigration to and emigration from niches occurs. Spiders are more or less randomly distributed, but other forms exhibit contagious distribution with a tendency to form aggregations. Cole has found that the Charlier coefficient of distribution gives a satisfactory index of the intensity of the aggregation tendency. Weather influenced numbers found in cryptozoan habitat. Soil moisture had greatest effect.

Jones (*Amer. Midl. Nat. 35*) has studied the variations in abundance of certain invertebrates in deciduous forests in the same region. He divided the year into six seasons and listed the insects according to these divisions. Temperature, humidity, precipitation, light, wind, and enemies are important in population fluctuations. Food is, of course, significant. The climax condition is characterized by the presence of many species in small numbers. The time of hibernation in the fall may depend on mean temperature, rate of temperature fall, minimum temperature and the same general fluctuation in the spring affects emergence. The abundance of these animals is decreased by hot, dry weather.

Rice also studied the deciduous forest animal population (*Amer. Midl. Nat.* 35) in the lower vegetation and the ground to a depth of 10 cm. It was found that weather fluctuations affect the abundance and movement of animals markedly. A warm spell in early spring followed by cold weather was deleterious to them. Plant hibernating forms were more abundant in dry summer weather and ground forms in the wet summer. She determined the bird population and estimated the number of insects consumed by the nesting pairs of birds and their offspring during the season. Insects apparently move into forests from the adjoining areas and move down from the tree tops in October. The spring maximum of insects and migrating birds occurs in April.

In the study of any insect population, of economic importance or otherwise, the dissemination of individuals is important. Wolfenbarger (*Amer. Midl. Nat. 35*) has reviewed the literature and discussed the dispersion of small organisms, particularly the distance dispersion rates of bacteria, spores, seeds, pollen, and insects. He finds that this dispersion can be satisfactorily plotted by means of a logarithmic regression.

PLANT RESISTANCE TO INSECT INJURY

A great deal of interest has been taken recently in the development of species of economic plants which may be resistant to insect injury. This phase of insect control involves genetics as well as entomology and other pertinent sciences. Although no world-shattering discoveries came to light during the past year, the goal is alluring and sometimes attained. Winter wheat resistant to Hessian fly, sugar cane more resistant to sugarcane borers, corn more resistant to corn borers and earworms, alfalfa more resistant to pea aphids, and cotton more resistant to cotton aphids are cases in which progress is being made.

BOTANY

By HOWARD J. DITTMER
PROFESSOR, UNIVERSITY OF NEW MEXICO

EVOLUTION

Some comparisons of chemical ontogeny with chemical phylogeny of vascular plants were made by McNair, who came to the conclusion if chemical ontogeny is in any way the epitome of chemical phylogeny then we may have a pattern which may aid in the phylogenetic classification of plants by their chemical products. The carbohydrate-fat ontogeny was shown to have parallel phylogenetic representation. From this analysis monocotyledons are more primitive than dicotyledons, and archichlamydeae are more primitive than sympetalae. The occurrence of cyanogenetic glycosides is more prevalent in the angiosperms in the more advanced of the older groups and also in the more advanced families of the different orders. A similar paper by Synge discussed the chemical aspects of evolutionary processes as shown in the configuration of the amino acids of higher and lower organisms.

CYTOLOGY

Nirula of India described meiosis in Daemia of the Asclepiadaceae. He states that the achromatic figure is intranuclear in origin and that the nucleolus is a storehouse for chromatin. A nucleolus is formed in heterotypic telophase in association with each of the 12 haploid chromosomes. These coalesce during interphase to form one nucleolus.

Jeffry stated that the hypothesis of Chiasmatypy and the possibility of true sexual union taking place long after the junction of sperm and egg have no sound basis in fact. Fertilization occurs at the time of union of the gametes and all chromosome unions are end to end.

Stebbins reviewed the literature published in the last ten years on the cytological analysis of species hybrids. Emphasis was given to the origin of genetic sterility barriers between species.

A technique for counting numerous chromosomes is described by Chen. It requires the use of an ocular disk ruled off into a number of equal divisions (6) to facilitate observation of different areas of the nucleus, and a set of celluloid sheets, each having a six-inch square ruled off into six equal divisions, on which drawings are made of successive focal levels within the nucleus. The total number of chromosomes drawn on each sheet is determined, and the grand total number of chromosomes thus drawn represents the number of chromosomes in the nucleus.

GENETICS

Cook compiled a summary of plant patents published since 1931. Of 612 plant patents issued since then, 299 are for roses. Other ornamentals total 151 patents and 136 cover allegedly new forms of fruit or other agricultural products. The total represents about 0.1 per cent of the patents issued during this period.

A distinctively mottled-leaf character in winter squash (*Cucurbita maxima*) is described by Scott and Riner, and the inheritance of the character is presented. Leaf mottling is one of the few vegetative characters that is easily recognized, a fact which may make the character valuable as a marker in linkage studies. The mottled leaf is inherited as a single dominant to the normal uniform green color of leaf, giving three plants with mottled leaves to one with uniform leaf color in the F_2.

Sewall Wright presented the introduction to a symposium on genes as physiological agents. The nature of the gene, including its size, reproduction, specificity, mutation, and the role of the gene in growth and differentiation were considered. Production of proteins may be basically the only type of gene action. It is still undecided whether differentiation is directed by chains of gene-controlled reactions initiated by special local conditions or by genically induced mutations of plasmagenes.

Fries developed 12 physiological mutations (strains) in the fungus *Ophiostonia multiamulatum* by x-rays. The physiological properties were heritable. Polyembryony in *Asparagus officinalis* was studied by Randall who observed about 0.95 per cent polyembryony in various seed lots. Various chromosome numbers were also noted.

Bruce's explanation of hybrid vigor was presented by Richey in which the explanation revolves about dominant interaction as a cause of hybrid vigor.

ECOLOGY

Laird described the influence of lime, where arable crops were suffering seriously, on the yield of hay and the botanical composition of the sward on intensively cropped land in Ayrshire, as well as its influence on the grass seed sown 14 years later.

Flowering behavior and natural distribution of the eastern ragweeds (*Ambrosia*) as affected by length of day was described by Allard. Staminate flowers were predominant in association with the longer days while the pistillate expression was favored by very short days. As the plants became dwarfed from any reason, the pistillate expression becomes predominant owing to suppression of the staminate condition. This condition is also typical with the shorter days later in the season.

Jenkins found airplanes to be of great help in making rapid surveys of trees and plants producing strategic raw war materials in the American tropics where land travel was slow and difficult. Plants could be identified from altitudes up to 1,000 feet using distinguishing characteristics of the spp., type of habitat, and easily identified indicator plants. Speed of planes used was from 55 to 110 miles per hour.

Under conditions of southeastern Russia, Bialy noted that perennial grasses exert a strong desiccating effect on the soil, and it is essential to include a black fallow in the rotation to allow a supply of moisture to accumulate. Correct cultivation to produce a water-retaining structure and measures for snow retention are also important.

Bonck described plant succession on abandoned farmland in the vicinity of New Orleans, La. Three broad stages of succession were recognized: (1) An annual weed stage, (2) a perennial weed stage, and (3) a shrub stage, beginning in the second growing season and increasing to maximum size and density in the tenth year.

Weaver and Zink described the length of life of roots of ten species of perennial range and pasture grasses. Considerable variation occurred but over 50 per cent of the grass roots survived after three years growth. Clipping grasses to a height of two inches caused the grasses to lose from 15 to 75 per cent of their roots while unclipped lost less than 3 per cent.

SYSTEMATIC

G. W. Martin challenges the view of Thom and Raper who wrote *Manual of Aspergilli,* in which they suggested that the generii name *Aspergillus* should apply not only to the conidial stage but also to the ascosporii stage. Martin claims this would disregard the rules of nomenclature.

Up to 1939 the production of agar-agar was exclusively a Japanese monopoly; therefore, the development of an agar industry in India should be encouraged since the Chilka weed, *Gracilaria lichenoides,* has a richer agar content than most of those in Japanese waters. This view was expressed by an Indian worker.

This section covers Paleobotany, Algae, Fungi, Bryophytes and Pteridophytes, in addition to Spermatophytes. Hundreds of papers were presented describing almost as many new species from all corners of the earth.

MORPHOLOGY AND ANATOMY

The Russian, Alesksandrov, is of the opinion that maize fruit is more of a millet than a caryopsis and bases his conclusion on the fact that the atropous ovule of maize later becomes camylotropous and also that in the ovules of Hordeae the placentochalazal region assumes a lateral position during fruit development, and this growth pattern is associated with the formation of a groove in the caryopsis; in the maize fruit the placentochalazal region remains at the base of the fruit and no groove is formed. Other differences including development of nucellus, behavior of antipodals, and vascular bundle arrangement suggests that, whereas the typical caryopsis is a tricarpellary fruit, the maize fruit is derived from one carpel.

Miller and Wetmore described the development of the embryo of *Phlox drummondii*. Sections of the early proembryos show an axial symmetry and a cellular homogeneity. Pantulu worked out the embryology of seven species of *Cassia* and found them anatropous with a slight tendency toward amphitropy. The normal 8-nucleate embryo sac is found in all of the species. In a later paper the authors described the seedling development of the same plant and noted a particularly high transition region. A third paper described the developing shoot apex. They noted that the vegetative shoot apex had a tunica of 1-2 layers while the floral apex possessed 3-4 layers.

Esau described the morphology and reproduction in guayule. Complete data on the study of apomixis in Parthenium were included. Reproduction was studied in 36, 54, 72, and 108 chromosome types of three different species of *Parthenium*.

PHYSIOLOGY—WATER RELATIONS

Henrici noted the effect of wilting on the direct assimilates of lucerne and other fodder plants. In each of six species investigated, starch disappeared during wilting. The leaves wilted before the stem, which accumulated starch. Sucrose increased for two days before wilting set in, then fell, and reducing sugars increased. Some starch was always present. The amount of sugars found after wilting did not correspond to the lost starch. Respiration continued strongly after wilting, then fell off but increased again before death.

Kramer reported on the absorption of water through suberized roots of trees. Measurable absorption occurred through all roots studied. Comparison of rates of water movement through segments of pine and dogwood roots indicate that dogwood roots are much more permeable to water than pine roots.

Absorption of water through suberized roots may be of considerable importance, especially in evergreens, at times when the soil is too cold or too dry for root elongation to occur and few or no unsuberized root tips exist.

Raleigh reviewed evidence showing that silicon is essential for the growth of at least several plants. Spraying foliage with solutions of K_2SiO_3 did not alleviate deficiency symptoms, however.

MINERAL NUTRITION

Hewitt described very extensive experiments made on vegetables, grains and clovers, using sand cultures and withholding, in his many experiments, a number of the major elements and some of the minor trace elements. Nicholas reported on the application of rapid chemical tests to plant tissues in the diagnosis of deficiencies of mineral nutrients. The tissue tests are considered valuable for diagnostic purposes; however, the time for sampling, effect of interfering substances on tissue extraction, and establishment of nutrient standards for various types of plants must still be worked out.

Bledsoe, Harris, and Tisdale described leafspot of peanut associated with magnesium deficiency. The symptoms first appeared on the terminal leaves and later progressed to the older leaves.

The effect of various ions on guttation of the tomato was studied by Raleigh. Tomatoes were grown in solutions lacking nitrogen, phosphorous, potassium calcium, and magnesium until deficiency symptoms developed. Then when the plants were supplied with nitrogen, phosphorous and potassium and the plants were kept in a room with a relative humidity of 94 per cent, marked guttation occurred. Guttation did not occur on the plants in the deficient solutions or on those in solutions supplied with calcium or magnesium.

Albrecht found that sweet clover thrived better on 10-mesh limestone. than on either 100-mesh or pulverized, indicating that slow deterioration of the limestone was better than much readily available. Rangnekar reported that vitamin C increased with an increase of manganese up to a certain point, beyond which the manganese became increasingly harmful. Carotene seemed to be uninfluenced by $MnSO_4$ treatment.

Hoagland indicates from his investigations that molybdenum is an essential element for the growth of higher plants. Reference is also made as to the possible role of molybdenum in the symbiotic fixation of nitrogen by leguminous plants.

RESPIRATION, FERMENTATION

Biale investigated the effects of oxygen on carbon dioxide evolution in Fuerte Avocados. The rate of oxygen absorption by the fruit was studied at 15°C under 2.5, 5, and 10 per cent oxygen and in air. It was observed to follow closely the rate of carbon dioxide production with some tendency for a higher R.Q. at low oxygen tension. The effects of oxygen tension on respiration were markedly modified by temperature changes.

Lal and Srivastava noted that, irrespective of the portion from which a set was selected for measurement of respiration rate, the intensity of carbon dioxide output declined with each successive increase in age of tillers of sugar cane. Younger tillers were physiologically more active than the old and mature canes. Variations in respiration rate were found to be related to fluctuations in glucose more than sucrose, particularly in tillers of the older group.

Experiments by Lindahl and Lindberg show that inorganic pyrophosphate may be accumulated under certain conditions in baker's yeast.

PHOTOSYNTHESIS, PIGMENTS

Richter, Sukhorukov, and Ostapenke, in experimenting with ten plant species belonging to five families, came to the conclusion that the initial stages of photosynthesis, the assimilation of carbon dioxide, and the elimination of oxygen in a leaf are independent of the developmental stage of the plant, nor was there any correlation in these respects between the leaf and the reproductive organs of the plant. They furthermore reported in a later paper that photosynthesis proceeds independently of growth processes and of the distribution of organic matter within the plant.

W. E. Foster investigated the supposed presence of formaldehyde-polymerizing enzymes in green leaves. Experiments show that production of reducing sugar by autolyzing leaf-tissues is not accelerated by adding formaldehyde to the systems. The evidence lends no support to the view of Bodnar that green leaves may contain an enzyme capable of polymerizing formaldehyde to reducing sugar.

GROWTH, REPRODUCTION

Measurements made by Cormack of immature and fully grown epidermal cells show that a cell continues to grow in length after a papilla begins to push out, and that more rapid growth occurs in the apical end of the cell than in the basal end. Morel isolated tissues of young shoots of grapevine and grew them in vitro. The shoots showed a marked degree of polarity and grew quite readily. They behaved more like herbaceous plants in such a medium than woody plants. Loo cultivated excised dodder (*Cuscuta Campestris*) stem tips in vitro in light for a period of five months through many transfers. The excised stem tips produced lateral buds and flowers without the formation of leaves and roots. This is probably the first case where floral organs have developed on excised stem tips in vitro. The chlorophyll produced in the excised stem tips of dodder seems to play an important part in maintaining the growth of the culture. In Argentina, Burgos came to the conclusion that the quality of the potato tuber is primarily dependent upon climate. A cool climate where insect vectors of virus diseases are less abundant is most beneficial.

Cube (*Lonchocarpus utilis*), a native rotenone-bearing plant of South America, has been grown as a fish poison for centuries by the native Indians. It has never been known to flower and has been propagated from cuttings by the Indians. Attempts to induce flowering experimentally at Tingo Maria revealed that girdling the main branches of Cube plants in May induces flowering in September. This is a practical field method which should prove a great aid to both genetical and taxonomic studies with Cube. This work was done in Peru at the agricultural experiment station and reported by Cooper, U. S. Department of Agriculture.

GROWTH SUBSTANCES

Various plant hormones were used in numerous experiments on plants and fungi, and the extraction of auxins from plants grown under many different nutrient conditions contributed much of the experimental work in this field. The new weed killer, 2,4-dichlorophenoxyacetic acid, was also being studied extensively to note its effect in varying concentrations of different plants under different controlled conditions. The literature indicates that it is very effective on most dicotyledonous plants but with monocotyledonous plants it may be an effective weed killer only in higher concentrations.

RADIATION EFFECTS

Scully, Parker, and Borthwick described the interaction of nitrogen nutrition and photoperiod as expressed in bulbing and flower stalk development of onion. Plants grown on a photoperiod at or near that critical for bulb formation exhibited the greatest bulb development with the lowest nitrogen concentration and the least with the highest concentration. Onion plants were grown from seed to seed without an intervening dormant bulb stage by controlling the photoperiod and concentration of nitrogen available for growth.

Effect of x-rays on vetch was noted, and other experiments showing the action of x-rays on the cytoplasm of vegetative plant cells were carried out. As yet no scientific reports have been made on the effect of atomic radiation on plants in Japan or in any of the experimental areas in the United States. Such studies are now in progress, and the effect of atomic radiation on plants, which did not prove lethal, may soon be reported.

OSMOSIS, PERMEABILITY

Osterhout demonstrated the effects of hydroxyl on negative and positive cells of *Nitella*. Potassium hydroxide was particularly effective while sodium hydroxide was less effective in transforming a negative cell to positive and *vice versa*. Furthermore, part of a cell may be changed to positive while the remainder of the cell continues negative. According to Osterhout, this shows that the protoplasmic surface can not be a pure system; "for in such a system all cations must have greater mobilities than all anions or *vice versa*."

GERMINATION, DORMANCY

Denny described a method for treating dormant gladiolus cormels to increase germination. He stored the cormels over winter at 5°C to 10°C, then 10 to 20 days before planting, treated them with 40 per cent ethylene chlorohydrin at the rate of one pint per 80 pounds of cormels. Barton and Gorman reported on the effect of age and storage condition of seeds on the yields of certain plants. Age reduced the percentage of germination, but in most cases the plants which germinated from old seeds were just as good at those kept a normal period and in some cases flowered earlier.

In the few cases where inferior plants developed it was found to be the result of storage conditions rather than age.

METABOLISM, DIFFERENTIATION

Determination of the freezing point of sap from peel and pulp of citrus fruit was investigated by Shiftan, who found that cold readily penetrated the fruit; at —4°C ice is formed, and the fruit is injured. Within the crown of the tree, the temperature may be 1°C higher than outside it on calm nights, and injury to fruit growing in this position is less likely.

Lundegardh maintains that data obtained from studies of bioelectric potentials are still consistent with the view that the surface of a root is a mosaic of positive and electric valences which become saturated hydrogen and hydroxyl ions when the medium is pure water.

TRANSLOCATION, STORAGE

Work by Meyer on the use of tagged atoms, radioactive or otherwise, has confirmed the accepted views that the xylem is the path of the ascent of minerals and that the phloem is the path of translocation of food. Carbon dioxide used in photosynthesis was found to appear next as carboxyl groups attached to molecules of high molecular weight.

TOXICITY

The effects of 2,4-dichlorophenoxyacetic acid on bindweed and sow thistle were observed by several workers at the New York Agricultural Experiment Station. Leaves were plasmolyzed first with the toxin eventually traveling to the roots, although in bindweed this movement was extremely slow.

Other substances studied by various workers included adrenaline, cyanic acid, and DDT. A study by Pulvertaft of London revealed that pollen grains show the same order of sensitivity to antiseptics as bacteria; but their sensitivity to penicillin is negligible and of the same order as vertebrate cells in tissue culture.

ECONOMIC BOTANY

By M. T. Henderson
Associate Professor, The Pennsylvania State College

CRESTED WHEAT GRASS

The history of crested wheat grass in America illustrates how the value of a potentially important plant introduction may remain unrecognized for a considerable period (*Journal of American Society of Agronomy,* 1946). Seed of this grass was first introduced into the United States from Russia in 1898. However, its special adaptability to the northern Great Plains area was not fully appreciated until after 1930, when many wheat fields that had been abandoned because of the drought of the middle thirties were being seeded to grass. Crested wheat grass proved to be the only grass available which possessed sufficient drought resistance and winter hardiness for successful establishment of sod.

WHEAT

One of the greatest hazards to wheat growing in the winter wheat region is the hessian fly. Although some degree of control is obtained by planting the wheat late in the fall, the most satisfactory method of controlling the fly appears to be the development of resistant varieties. In 1935 a high degree of resistance was discovered in several spring sown wheats. This resistance has now been transferred successfully to cold, hardy, soft red winter wheat types which are in the process of evaluation to determine their suitability (*Journal American Society of Agronomy,* 1946).

OATS

For almost 100 years it has been a commonly accepted opinion that the common wild white oat, *Avena fatua,* is the progenitor of the cultivated oat varieties belonging to the species *Avena sativa.* However, evidence accumulated in recent years suggests that cultivated oats may have been derived instead from the wild red oat species, *A. sterilis* (*Journal of American Society of Agronomy,* 1946). Evidence from the fields of Cytology and Genetics, Morphology and Histology, Plant Pathology, Physiology, and Phytogeography is more compatible with the theory that the cultivated oat species *A. sativa* was derived from *A. sterilis* than with the *A. fatua* origin of our cultivated oats. Practically all of the genes for resistance to the major oat diseases of the United States can be traced directly or indirectly to *A. sterilis* as a source.

In 1946, what is apparently a new species of the *Helminthosporium* fungus caused widespread damage in oats in the United States (*Phytopathology,* 36:406 and 407, 1946). The disease was reported as causing appreciable damage on oats throughout the eastern half of the United States. The new crown rust resistant varieties of oats which derived their crown rust resistance from the Victoria variety, such as Tama, Vicland, and Boone, proved particularly susceptible. Damage may be caused to all parts of the plant—roots, crown, stems, leaves and grain. The fungus has been referred to most frequently as *Helminthosporium "96,"* although it has recently been described and assigned the name *Helminthosporium victoriae.* A 50 per cent reduction in yield from the disease was obtained in tests conducted in Iowa. An encouraging degree of resistance was found in several new varieties of oats.

Crop rotation practices in the northern Great Plains influence considerably the activity of root rotting fungi of small grains and grasses (*Phytopathology,* 36:410-411, 1946). Several years of continuous fallow reduced greatly the damage from these organisms, while one year of fallow did not affect injury appreciably. Barnyard manure and green manure crops reduced root rot damage only during years of abundant precipitation. The use of grasses in long-term rotations reduced the incidence of root rotting on the small grain in the rotation, provided some crop other than a small grain followed the grass.

ALFALFA

Insects, particularly Lygus bugs, cause enormous reductions in the seed yields of alfalfa in the western alfalfa seed production area. The use of DDT offers considerable promise as an economical means of controlling these insects. Applications of 10 per cent DDT in Utah have increased seed yields by 50 per cent (*Journal of American Society of Agronomy,* 1946).

PASTURE RESEARCH

The organization, research program, and 10 years of progress of the U. S. Regional Pasture Research Laboratory have been described in *Miscellaneous Publication No. 590* of the U. S. Department of Agriculture. The Laboratory was established at State College, Pa., in 1936 under the Bankhead-Jones Act, to undertake "An Intensive and Fundamental Study of Pasture Improvement." The region which the Laboratory serves includes Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, Maryland, and West Virginia. The work of the Laboratory is divided into (1) establishment, fertilization, and management of pastures; (2) chemical problems in pasture research; (3) breeding new varieties of grasses and legumes; (4) plant disease problems of grasslands.

Kentucky bluegrass and white clover have probably constituted the predominant species in better permanent pastures in the northeastern region. One of the management problems consists of maintaining an adequate stand of white clover. Top-dressing of permanent pastures with lime, phosphorus and potash, and frequent grazing has been effective in increasing yields and aids in maintaining satisfactory stands of clover. In spite of this improvement, however, Kentucky bluegrass does not provide adequate forage during midsummer. Consequently, much of the research has been turned to the larger grasses and legumes, of which orchard grass, brome grass, Ladino clover and alfalfa seem to be the most promising. Other species that show promise include reed canary grass, tall oat grass, tall fescue, and birdsfoot trefoil. These larger species make better growth during midsummer and produce a greater total amount of herbage than Kentucky bluegrass. A mixture of orchard grass and Ladino clover seems particularly promising.

In the breeding work at the Laboratory, attention is being given primarily to orchard grass, brome grass, Ladino clover and alfalfa. Important characteristics being sought in new strains include winter hardiness, resistance to important diseases, tolerance to drought and flooding, and ability to withstand occasional periods of too little or too heavy grazing. In conducting the breeding program, material is collected from areas including the northeastern region. The collected material is planted as individual spaced plants in source nurseries of as many as 10,000 plants. A small percentage of selected plants are increased vegetatively to produce clones. A progeny test is obtained for each of the superior clones. After considering all records, a small number of the best clones are combined to synthesize new strains. Some degree of inbreeding is being practiced with all of the species under investigation. An extensive hybridization program is in progress with orchard grass, alfalfa, Ladino clover, and meadow fescue.

Plant disease research includes snow mold of grasses, stripe smut of grasses, leaf spot of orchard grass, crown rust and net blotch of meadow fescue, wilt and leaf spot diseases of alfalfa, and leaf spot of Ladino clover.

HYBRID VIGOR

The story of the role of hybrid vigor in increasing corn production is well known. A remarkable development occurred in this phase of plant improvement during the 1930's with the result that more than 90 per cent of the acreage of corn in the Corn Belt is being planted to hybrids. The phenomenon of hybrid vigor—the tendency for the first generation of a hybrid resulting from the crossing of certain combinations of lines to exceed the parents in vigor—is now being utilized in the improvement of other plants. High-yielding hybrid onions, tomatoes, and cucurbits have passed through the research phase and are being grown commercially on a limited scale.

WEED CONTROL

In spite of expensive control measures being practiced, weeds continue to extract an enormous toll in our agricultural economy through reduction in yield of economic plants. Consequently, a continuous search is in progress to find selective weed killers, effective against a wide variety of weeds, which cause little or no damage to economic plants. The chemical 2,4-dichlorophenoxyacetic acid, commonly known as 2,4-D, is the most promising found to date for the control of many broad-leaved weed plants. Most narrow-leaved plants appear to be injured only slightly or not at all by the concentrations required to kill broad-leaved weeds. 2,4-D has been effective against dandelion, plantain, pennywort, Japanese honeysuckle, false strawberry, annual morning glory, daisy, winter cress, wild mustard, chickweed, pokeweed, curled dock, ragweed, pigweed, burdock, Frenchweed, wild lettuce, and annual sow thistle. It destroys the leaves of such perennial weeds as bindweed, Canada thistle, leafy spurge, and perennial sow thistle, but whether the roots will also be killed ultimately has not been determined. Such woody plants as chokecherry, poison ivy, sumac, honeysuckle, hawthorn, and elder have been killed also by application of 2,4-D as a foliage spray.

On the other hand, spraying of tomato plants being grown in greenhouses with very low concentrations of 2,4-D has been found to be of value in obtaining maximum fruit setting.

In the report of The Policy Committee on New Herbicides of the North Central Weed Control Conference at the 1946 meeting, the following statements were made regarding 2,4-D: "Two years of research have proven 2,4-D preparations to be valuable herbicides—useful tools in the unending fight against weeds. They may be advantageously used: (a) To control broad-leaved weeds in lawns and turfed areas generally. (Caution is required on bent grass and buffalo grass lawns.) (b) To control and perhaps ultimately eradicate a large variety of broad-leaved weeds and many woody plants from ditch banks, right-of-way, fence rows, stony areas, and many other areas which it is not possible or desirable to plow. (c) For spot treatment of susceptible perennial weeds in pastures, or to control susceptible annual and perennial weeds in pastures where legumes are not an important component. (d) To reduce vigor and begin the eradication of susceptible perennial weeds, either alone or in tolerant growing crops. (e) To control many annual weeds, either alone or in tolerant growing crops."

It was emphasized that treatment of most weedy areas is necessary for complete control. One of the chief advantages of 2,4-D is that broad-leaved weeds may be controlled in grassed areas without injury to the desirable grasses. A 0.1 per cent solution of 2,4-D acid or its equivalent is considered the standard concentration. Application may be as a dust or concentrated spray. Seedlings, or plants in active growth have generally been more susceptible than mature or dormant stages. "Low temperatures (40° to 60° F) slow up the speed of action more than they reduce the final effect of 2,4-D. The early warnings against treating at temperatures below 60° F were much too drastic."

Leaching and decomposition generally will remove 2,4-D from the soil in a comparatively short time. No injury to livestock has resulted from standard treatment with 2,4-D.

POTATO

Four new varieties of potatoes were introduced in 1946 (*The American Potato Journal,* 23:315-329 and 343-347, 1946). The Calrose variety is important principally for its moderate resistance to late blight. It appears to be well adapted to environmental conditions in California. Three new scab-resistant varieties named Ontario, Cayuga, and Seneca have been developed through cooperative research of the U. S. Department of Agriculture and the New York Experimental Station. These varieties are highly resistant to scab, somewhat resistant to wilt, and compare favorably in yield with commonly grown commercial varieties.

Preliminary results indicate that DDT gives effective control of the major foliage-feeding insects of potatoes with phenomenal increases in yields reported from its use. Gains in yield as great as 150 per cent have been reported (*American Potato Journal,* 23, 1946).

TOMATO

One of the most destructive diseases of economic plants in 1946 was late blight of tomatoes. The disease caused serious losses in practically all of the important tomato-growing areas east of the Mississippi River. It has been estimated that tomato growers in the United States suffered a loss of $40,000,000 from late blight in 1946.

The disease is apparently caused by the same fungus which produced the destructive late blight epidemics of potatoes in Ireland with the resultant famine during the middle of the nineteenth century. However, it seems probable that the tomato losses in 1946 were the result of a new strain of the fungus which is especially virulent on tomatoes. Periodic spraying of the foliage with an insoluble copper fungicide gave effective control in tests in 1946.

SWEET POTATO

Soil rot of the sweet potato was observed first in serious form in 1934, occurring in small isolated areas in Louisiana. At present the disease is widespread in several parts of the United States (*Phytopathology* 36: 869-75, 1946). The causal organism, *Actinomyces ipomoea,* is unimportant in soils having a pH reading of 5.0 or less. By applying sulphur at rates of 500 to 800 lbs. per acre to Louisiana soils, where the disease is most serious, it has been possible to lower the pH to 5.0 for a period of four to six years. Losses have been practically eliminated by this application of sulphur with increases of 120 to 160 crates per acre. The disease causes more damage during dry seasons than in wet seasons.

PHYSIOLOGIC SPECIALIZATION IN PLANT PATHOGENS

One of the most efficient methods of controlling diseases of economic plants is the development of varieties of plants resistant to disease. Work toward this end has been in progress for many years with very favorable results for most of the serious diseases of crop plants. However, this is made a never-ending task through the variability of the parasitic organisms which cause plant diseases. Varieties which are resistant at the time of their introduction may not remain resistant indefinitely. Numerous instances have been observed in which new strains of a fungus capable of attacking a hitherto resistant variety develop and increase to an extent sufficient to render that variety susceptible. Such an instance was reported for rice (*Phytopathology* 36:950-952, 1946). The rice variety Rexora, the most important high-quality, long-grained variety of rice grown in the United States, has been resistant to all known races of the fungus, *Cercospora oryzae*. However, Rexora has proved susceptible to the disease in the last two years. Isolations of the fungus from diseased material of Rexora revealed a new strain of *Cercospora oryzae* to which Rexora is susceptible.

In a lecture delivered to several chapters of the Society of Sigma Xi (summarized in *Journal of Heredity,* 1946), Stakman elaborated on the tendency of plant pathogens to change in their ability to infect host plants and consequently assuring no rest for the plant breeder. The wheat variety and disease history in the spring wheat area of the United States illustrates effectively the role which diseases play in agriculture. About 1910, the principal spring wheat varieties were Preston, Haynes Bluestem, and Glyndon Fife. Stem rust and stinking smut were major diseases on these varieties while scab, loose smut, and leaf rust were relatively unimportant. With the replacement of these varieties by the Marquis variety, the scab disease was raised from a minor wheat disease to the rank of a major disease through the extreme susceptibility of this new variety. Marquis was somewhat resistant to stinking smut and early enough to escape serious damage from stem rust, so that the importance of these diseases diminished temporarily. However, in the devastating stem rust epidemic of 1916, Marquis was damaged so severely that many farmers refused to grow it again.

Farmers who continued to grow wheat shifted to durum varieties, and for several years the durums seemed to have eliminated the old disease hazards, but root rots and ergot, previously rare diseases of wheat, soon made the growing of durums a risky enterprise.

The first stem rust resistant bread wheats, such as Kota and Ceres, came into production in the 1920's and "shuffled" the ranks of diseases once more. Stinking smut again became prevalent; loose smut and leaf rust became destructive diseases. Finally, the popular and hitherto stem rust resistant variety Ceres was ruined by stem rust in 1935. It was largely replaced by the new variety Thatcher, which was more resistant to stem rust, stinking and loose smuts, but was very susceptible to scab and leaf rust. Thatcher has now been replaced by newer varieties with better combinations of resistance to various wheat diseases.

In spite of this rather pessimistic aspect of changing pathogens, reducing the value of new improved varieties, there has been constant progress in reducing total losses, so that risks from diseases are not as great as they were 35 years ago.

As an example of the extreme variability of fungi, more than 200 parasitic races of stem rust of wheat have been found since 1916. These arise largely through hybridization between existing races on the barberry plant, the plant on which the sexual stage of the rust fungus develops.

PLANT PATENTS

Since the plant patent act became law in 1930, 612 plant patents have been issued (*Journal of Heredity*, 1946). Since the act only permits patenting of vegetatively propagated plants, its application is limited rather largely to certain horticultural plants, particularly ornamental plants. Almost half of the patents granted (299) were for roses, and 151 patents were issued for other flowers. The 612 plant patents issued during this period represent less than one-tenth of one per cent of the total patents issued, suggesting that the patent law is not sufficiently broad to perform the services for which it was intended

PERIODICAL PUBLICATIONS

American Botanist
5257 Hinesley Ave., Indianapolis.
American Journal of Botany
Botanical Society of America, Burlington, Vt.
American Naturalist
Science Press, Lancaster, Pa.
American Scientist
Yale University, New Haven, Conn.
Annals of the Entomological Society of America
Ohio State University, Columbus.
Botanical Gazette
5750 Ellis Ave., Chicago.
Botanical Review
Botanical Garden, New York City.
Journal of Economic Entomology
College Park, Md.
Journal of Experimental Zoology
36th Street and Woodland Ave., Philadelphia.
Journal of Mammalogy
University of Michigan, Ann Arbor, Mich.
Journal of Morphology
36th Street and Woodland Ave., Philadelphia.
National Horticultural Magazine
American Horticultural Society, Washington, D. C.
Quarterly Review of Biology
Mount Royal and Guilford Aves., Baltimore, Md.
Science
Smithsonian Institution Building, Washington, D. C.
Scientific American
24 West 40th Street, New York City.
Scientific Monthly
Smithsonian Institution Building, Washington, D. C.
Yale Journal of Biology and Medicine
New Haven, Conn.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

ACADEMY OF NATIONAL SCIENCES OF PHILADELPHIA, 1900 Race St., Philadelphia, Pa.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, Smithsonian Institution Building, Washington, D. C.

AMERICAN ASSN. OF ECONOMIC ENTOMOLOGISTS, College Park, Md.

AMERICAN ASSN. OF MUSEUMS, Smithsonian Institution, Washington, D. C.

AMERICAN MICROSCOPICAL SOCIETY, Kansas State College, Manhattan, Kan.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

American Museum of Natural History, Central Park W. and 77th St., New York City.

American Nature Assn., 1214 Sixteenth St., Washington, D. C.

American Nature Study Society, 5540 Pershing Ave., St. Louis, Mo.

American Ornithologists' Union, Ohio State University, Columbus.

American Phytopathological Society, Bureau of Plant Industry, Washington, D. C.

American Society of Naturalists, Ann Arbor, Mich.

American Society of Zoologists, University of Chicago, Chicago, Ill.

Boston Society of Natural History, 234 Berkeley St., Boston, Mass.

Botanical Society of America, Columbia University, New York City.

Carnegie Institute, Pittsburgh, Pa.

Chicago Museum of Natural History, Roosevelt Road and Lake Michigan, Chicago, Ill.

Entomological Society of America, Columbus, Ohio.

Eugenics Research Association, Cold Spring Harbor, New York.

Franklin Institution, Benjamin Franklin Parkway at 20th Street, Philadelphia, Pa.

Genetics Society of America, Ohio State University, Columbus, O.

Museum of Comparative Zoology, Cambridge, Mass.

National Audubon Society, 1006 Fifth Ave., New York City.

New York Microscopical Society, American Museum of Natural History, New York City.

New York Zoological Society, 630 Fifth Ave., New York City.

Paleontological Society of America, American Museum of Natural History, New York City.

Shaw Botanical Gardens, St. Louis, Mo.

Southern California Academy of Sciences, Los Angeles Museum, Exposition Park, Los Angeles, Calif.

United States National Museum, Tenth and Constitution Ave., Washington, D. C.

DIVISION XXIII

MEDICAL SCIENCES

MEDICINE, PATHOLOGY, PHYSIOLOGY

By Hamilton Southworth
College of Physicians and Surgeons, Columbia University

GENERAL

In the medical sciences, the year 1946 witnessed the reconversion of teaching and research institutions to a more normal peacetime status. About 40,000 doctors from the services were reabsorbed into the peacetime ranks of physicians and had to readjust to civilian life. Research programs were reorganized to make room for the returning workers. At the same time, the extensive Federal support of medical research, through the Committee on Medical Research of the Office of Scientific Research and Development, came to an end, and budgetary readjustment was required in almost all of the leading institutions.

The release of wartime censorship, first felt in 1945, led to further publication of significant work hitherto known only to a few workers in each specific field. Some of this material emanated from civilian laboratories and some cleared through military channels and represented clinical experience from the field. For the first time it was possible to coordinate a number of subjects and to discuss them freely at medical meetings.

The particular emphasis on chemotherapy, commented on in 1945, became if anything still more pronounced, with streptomycin accepted as a close rival of penicillin in the field of antibiotics, and with the clinical trial of several substances that received pharmacological and toxicological study during the war. In particular, the universal concern over the advent of atomic power focussed attention on radioactivity and its various physiological effects.

STREPTOMYCIN

The efficacy of penicillin is largely confined to those bacteria which take a Gram stain and are therefore known as Gram positive organisms. To combat the other great category of bacterial infections, those due to Gram negative organisms, by far the most promising material for other than local use is streptomycin, an antibiotic derived from Actinomyces griseus. In fact, it appears that this newer agent will control some of the Gram negative infections as dramatically as penicillin handles gonorrhea. The material is being manufactured in sufficient quantities so that experimental needs have been satisfied, and some can be secured for appropriate cases in general practice through distributing centers in the large hospitals. The cost, however, is still such as to justify its use only in seriously ill patients.

At a meeting under the auspices of the National Research Council, it was decided to measure streptomycin in terms of the metric weight of the pure substance. By coincidence, it was found that one microgram had an activity almost identical with one S unit as originally described by Waksman. One gram of streptomycin, as now ordered, is therefore equivalent to 1,000,000 S units. Three crystalline salts of streptomycin have now been prepared, and though the structural formula is as yet unknown, it is generally agreed that the material is $C_{21}H_{39}N_7O_{12}$.

Absorption of streptomycin from the intestinal tract is very slight, and the agent is therefore administered parenterally, generally by intramuscular injection in divided doses every three hours. Total daily dosage varies from 750 mg. to 4 gm. As the agent is more active at a high pH, preliminary and coincidental alkalinization is indicated in the treatment of urinary infections. Resistance to streptomycin has been observed to develop very rapidly both *in vitro* and *in vivo* so that high initial doses seem advisable. Unless the urgency is extreme, it is always wise to test the sensitivity of the organism before commencing treatment. Dosage can thus be guided to a certain extent and futile administration often avoided. It has been suggested that the very rapid development of resistance is due to the selective growth of resistant mutants. rather than to an alteration in the enzymatic activity of the strain as a whole.

Clinical applications can be summarized as follows:

(1) *Urinary tract infections* due to Gram negative organisms resistant to sulfonamides can be cured at least four times out of 10. Dosage in the majority of the 400 cases reported was 1.0 to 2.0 gm. daily for 5-7 days, and results were best in the few cases in which the urine was kept alkaline (pH of 7 or more). Coincidental surgery was often required for good results.

(2) *Meningitis due to the Influenza Bacillus* has responded better to streptomycin than to any other agent, and so have other severe infections due to this organism. Of the meningitis cases which are particularly common in young children, 2 out of 3 were cured. Intraspinal as well as intramuscular injections were used.

(3) *Tularemia,* an acute febrile disease usually contracted from wild rabbits but occasionally from ticks, flies, and the bites of other animals, formerly ran a course of 2-3 weeks and if pulmonary involvement developed, had a mortality of 40 per cent. Now the small Gram negative bacillus which causes it, has been shown to be sensitive to streptomycin, and 55 out of 67 treated cases have shown an immediate and striking improvement when the antibiotic was started.

(4) *Pneumonia due to Friedlander's bacillus* seems to have been benefited by streptomycin. Of 17 cases treated, 6 recovered and 3 improved permanently. There is suggestive evidence that acute cases caught in the early stages before necrosis develops respond very well.

(5) *Bacteremia or Peritonitis due to Gram negative organisms* may be favorably influenced by streptomycin, and certainly this agent seems to be the antibiotic of choice in these conditions. The response is dependent on the sensitiveness of the bacteria involved and on the local lesion through which the organisms made their entrance.

(6) *Tuberculosis* has at times been favorably influenced by streptomycin in doses of 2.0 to 4.0 gm. daily. A few patients with miliary tuberculosis and a few with tuberculous meningitis have shown striking temporary improvement, but nearly all have later succumbed to their underlying disease. Pulmonary tuberculosis of the exudative type has also shown some palliative effect, while more chronic cases with caseation have proved resistant. Streptomycin appears to be the most active chemotherapeutic agent so far described in clinical tuberculosis, but its effect is bacteriostatic rather than curative, and administration must be continued for months at a time. Final evaluation must await the results of prolonged studies and will probably depend on whether it will prove possible to continue the palliative effect of streptomycin over a period of a year or more without interfering with the natural development of immunity.

Streptomycin is not a non-toxic agent. In spite of the best efforts to date towards purification, histamine-like effects, such as headache, flushing, and vomiting, still occur, though with diminishing frequency. Sensitization develops in about 5 per cent of cases and is characterized by fever and skin eruptions of various types. The most disturbing toxic effects, however, have been tinnitus, vertigo, and deafness, which appear as late manifestations after the prolonged administration of large doses. With continued use of the compound, the symptoms generally decrease in severity, but there is some evidence that this is due to compensation rather than to restoration of function. Clinical symptoms are not common, but it has been reported that subclinical impairment is frequent after several weeks of large doses.

Until more is known of this toxic effect on the 8th cranial nerve, streptomycin should be reserved for those infections that are truly dangerous and are caused by organisms which are susceptible to its action.

ANTIMALARIALS

In spite of over twenty years of research in Germany and intensive efforts both in England and the United States during the war, no ideal antimalarial drug has been discovered. Data on three valuable new agents have recently been released. Inasmuch as malaria is reputed to cause a million deaths a year, these compounds are of real importance.

(1) *Chloroquine:* 7-chloro-4-(4-diethylamino-1-methylbutylamino)-quinoline, first mentioned in 1945 as SN-7618, has now been officially designated as chloroquine. Extensive studies indicate that, though its action is essentially similar to that of quinacrine (atabrine), it possesses definite advantages over that compound. In the suppression of vivax and falciparum infections, the effective plasma level is so low that with the nearly complete absorption and slow degradation of the compound, it is possible to achieve satisfactory results by giving a single tablet of 0.3 gm. once a week, instead of the daily 0.1 gm. found advisable with quinacrine. Furthermore, the compound is colorless, and no yellow staining of the skin occurs. In the therapy of acute attacks, it is only necessary to give 4 doses (totaling 1.5 gms.) over the course of 3-4 days. This will eradicate infection due to falciparum malaria, and though it does not significantly reduce the incidence of relapses due to vivax malaria, the average interval before the relapse occurs is longer than that with quinacrine. Toxic effects are similar to those with quinacrine but at the dosages used seem to be less frequent.

(2) *Pentaquine:* The great weaknesses of quinacrine and chloroquine are (a) that suppressive doses do not prevent the later development of vivax malaria, and (b) that after treatment of the acute attack of this type of malaria, the relapse rate of certain Southwest Pacific strains is as high as 70-80 per cent. Following a suggestion made before the war, British investigators found that the relapse rate could be markedly reduced by means of a two-weeks' course of treatment with pamaquine (plasmochin) 30 mg. and quinine 2.0 gm. daily. Higher doses of pamaquine, while more effective, led to serious toxicity.

Announcement has now been made of a new American compound to which the name of pentaquine has been given. Structurally related to pamaquine, it is 6-methoxy-8-(5-isopropylaminoamylamino)-quinoline. At therapeutic doses, however, it is only 50-75 per cent as toxic as pamaquine to man. Severe anemia has only been encountered in 1 of 171 white subjects treated, and, in monkeys at least, no methemoglobinemia is produced. Some cases of postural hypotension and of drug fever have been reported.

Pentaquine is too toxic to be recommended in the suppression and prophylaxis of malaria, and its effect in preventing relapses is incomplete when used alone. A daily dose, however, of 60 mg. of the base and of 2 gm. of quinine administered concurrently in divided doses every 4 hours for 14 days is sufficient to produce radical cure of severe infections due to P. vivax. In 35 patients treated during their third relapse, no further attacks have occurred.

It is to be emphasized that these results are preliminary and it remains to be seen how they will stand up under field conditions both as to efficacy and as to toxicity.

(3) *Paludrine:* During the war British investigators explored a series of guanidine and biguanide compounds possessing antimalarial activity. The most promising, which is N_1-p-chlorophenyl-N_5-isopropylbiguanide, has been named paludrine. 147 cases of acute vivax malaria and 22 of falciparum malaria have been treated with doses ranging from 10 to 700 mg. every 12 hours for 14 to 28 days with clinical cure of a promptitude comparable to that with the standard course of quinacrine. Vomiting, diarrhea, abdominal pain and occasional red blood cells and hyaline casts in the urine may appear as transient toxic effects with dosages of 1.0 gm. a day. A report from Australia, however, indicates that relapses of the vivax infection subsequently appear, though probably not as frequently as with quinacrine.

More significant, however, are the tests of causal prophylaxis which indicate that daily doses of 300 mg. prevented the subsequent development not only of falciparum malaria but of 5 out of 6 cases of vivax malaria. Moreover, with smaller doses there was evidence that the drug acted on the early forms of the parasite so that invasion of the red blood cells did not occur, while quinacrine only destroyed the red blood cell forms as they developed. 0.1 gm. of paludrine twice a week has been found to be effective as a suppressive for vivax infection and to act as a complete causal prophylactic for falciparum ones.

Indications are that paludrine will be inexpensive to manufacture. If Australian results are confirmed, it may prove the best of the antimalarials. Such cases of vivax infection as escape its prophylactic action may be kept under control by occasional doses of paludrine or may be eradicated by a course of quinine combined with an 8-aminoquinoline such as pentaquine.

FOLIC ACID

The new antianemic factor originally described under such various names as L. casei factor, Vitamin M, Vitamin B_c, and Folic Acid, has now been made commercially available as synthetic Folic Acid. Structurally it is a complicated molecule containing glutamic acid, a benzoyl group, and the pteridyl ring. It is generally accepted as a member of the vitamin B complex, and accumulating evidence indicates that it is effective in macrocytic anemias whether due to pernicious anemia, sprue, liver disease or faulty dietary.

The blood count in pernicious anemia responds as well to folic acid as to the intramuscular injection of liver extract. The material can be taken in tablet form by mouth and is quite without toxic effects in the doses of 5-20 mg. daily which have proved adequate. Besides the reticulocyte response and the rise in red blood count, patients have a dramatic increase in vigor, and such other disease manifestations as sore tongue and intestinal symptoms disappear. Whether there is improvement in the neurological manifestations of pernicious anemia is still not settled, but the evidence to date suggests that in this one respect folic acid is inferior to liver extract.

Sprue, whether of tropical or nontropical origin, also responds to folic acid in doses of 15 mg. or more daily. The macrocytic anemia, fatty diarrhea, and weakness are relieved, and the patients regain weight. There is some evidence, however, that the stools do not entirely return to normal and in particular that their fat content may remain high.

The mode of action of folic acid has been the subject of much speculation. It has been shown that the effectiveness of liver extract is not due to its minute folic acid content. Moreover, folic acid does not correspond with either the extrinsic or the intrinsic factor whose interaction is believed by Castle to prevent pernicious anemia. The situation has been further complicated by the discovery that 5-methyl uracil, a totally dissimilar compound which generally goes by the name of Thymine, is also effective in pernicious anemia if given orally in doses of at least 6.0 gms. daily. It is doubtful if this compound will be of practical importance, since the effective dose is 1,200 times that of folic acid. Thymine, however, is a constituent of the nucleic acid molecule. It has been suggested that folic acid may act as an enzyme in the synthesis of thymine or a thymine-like compound. It is also possible that the anti-anemic factor in liver has to do with the conjugation of folic acid within the body or its release from some stored form.

HISTAMINE COMPETITORS

For several years evidence has been accumulating to indicate that many of the manifestations of allergy are mediated by the release within the body of the substance, histamine. It was logical therefore to try to control allergic diseases by administering compounds which would block the action of histamine, presumably by competitive action. French workers discovered that certain substances containing the ethylene-diamine radical had such an action. A series of these compounds has been explored, and at the present time antergan and neoantergan seem to be the most promising. Meanwhile, in this country, two rather similar compounds were developed and given the names of benadryl and pyribenzamine.

Extensive clinical tests of benadryl and pyribenzamine have now been reported. Both compounds have been particularly effective in urticaria and angioneurotic edema. The itching is almost always relieved, and in about 80 per cent of cases the swellings are modified. Serum sickness is also benefited, except for the arthralgia, which is often unaffected. About 80 per cent of cases of atopic dermatitis have experienced relief from their itching. In hay-fever and vasomotor rhinitis, pyribenzamine is generally preferred to benadryl, with favorable effects in 65 to 80 per cent of cases. Results with asthma have been more disappointing, but there is evidence that benadryl helps about 10 per cent of cases and pyribenzamine nearly 30 per cent. In food allergy there has been some benefit but the results can not easily be quantitated.

Benadryl is administered orally in 50 mg. doses 3-4 times a day. Serious toxicity has not been reported, but about 50 per cent of patients experience some degree of drowsiness, lassitude, or dizziness. Pyribenzamine is usually commenced in similar doses, but it is often possible to administer larger doses (100-150 mg. 3-4 times a day) without side-effects. Only about 25 per cent of patients complain of toxic manifestations. Drowsiness and lassitude are the commonest symptoms, but nervousness, insomnia and dry mouth also occur.

Comparison of pyribenzamine and neoantergan has not been adequately reported as yet. In a small series of respiratory allergy cases, pyribenzamine was preferred by more patients than was neoantergan. Doses of 100-200 mg. of neoantergan were required but the side-effects were, if anything, less.

It must be emphasized that all these compounds act as histamine competitors. There is no evidence that they modify the underlying sensitivity of the patient to his allergen, and relief is afforded only during the period of administration. It is not yet known how much this temporary relief will decrease the indication for desensitization.

NITROGEN MUSTARDS

The chief, blister-producing, chemical warfare agent in the First World War was sulfur-containing mustard gas. With the advent of the Second World War, research on war gases was resumed, and a series of new agents was studied in which nitrogen was substituted for sulfur. These compounds were known as the nitrogen mustards. It was soon discovered that in addition to a local vesicant action, they had profound systemic effects especially upon the formed elements of the blood and the mucosa of the gastrointestinal tract. In general, the more rapidly cells were multiplying the greater was their susceptibility to these compounds. The toxic action was shown to be due to the formation of a cyclic onium cation.

The use of nitrogen mustards, especially of methyl-bis (B-chloroethyl) amine hydrochloride, on neoplastic disease has been reported this year. In advanced Hodgkin's disease, a favorable though temporary effect was obtained in nearly every instance when small doses were given intravenously. Cases employed were, in general, those which had previously been treated with x-ray and which were considered resistant to further irradiation. Tumor masses regressed, fever receded, and many patients experienced an improvement in appetite, weight and strength that lasted from 2 weeks to 5 months. Similar but less marked results were obtained in some cases of lymphosarcoma. It was not possible to predict which cases would be benefited, and it was noted that with successive courses the effect decreased progressively. A few cases of leukemia have also been treated, and the results so far indicate some benefit in a number of the chronic forms, but probably no more than would be obtained with roentgen irradiation. In far advanced cases the thrombocytopenia and anemia have been felt to contraindicate the use of nitrogen mustards.

The toxicity of the compounds is such that very careful observations of the blood cells, especially of the white corpuscles and platelets, are needed. If the usual fall in these elements becomes excessive, transfusion may be required, and penicillin may be advisable to ward off severe infection. In addition, the gastrointestinal symptoms, especially nausea and diarrhea, may be distressing; and thrombophlebitis at the site of injection has not been uncommon.

The use of the nitrogen mustards in inoperable carcinoma is now being explored. Preliminary results, except in a few special types, have not been encouraging, but in a field where so little of promise is available, some limited application may be found.

PHYSIOLOGICAL EFFECTS OF ATOMIC ENERGY

Research on atomic fission is still surrounded with deep secrecy, but some reports of the physiological effects have been released. The destruction wrought by the atom bombs dropped on Hiroshima and Nagasaki, where a total of 125,000 persons was killed, has been available for analysis.

Study of the Japanese victims revealed the conventional type of high-explosive injuries (air-blast injury due to flying debris or impact against fixed structures and crush injury due to the collapse of buildings). But in addition, there was an extraordinary number of radiation deaths due both to the heat of the explosion and to the instantaneous dose of short-wave and neutronic radiation which accompanied it. The heat effects were of the flash-burn type, in which exposed surfaces were charred but body areas covered with light clothing or shadowed by a wisp of hair were completely protected. Radiation effects occurring within 48 hours consisted of weakness, malaise, fever, and vomiting. The confusion of the civil services in the bombed cities prevented autopsy of the early deaths, but it is presumed that the findings would have been those of extreme radiation sickness with leukopenia and loss of adrenal lipoid. Later effects included weakness, anorexia, weight loss, diarrhea, epilation of the scalp, gonadal atrophy, and severe blood destruction.

Of the blood disturbances, the leukopenic group became apparent earliest, and most deaths occurred within three weeks with Ludwig's angina as the prominent symptom. The rapidity with which the white count fell suggested that the circulating white cells were killed as well as their marrow precursors. Next in order of occurrence were the hemorrhagic cases with a peak mortality between the 3rd and 5th weeks. Thrombocytopenia due to bone marrow damage appeared to develop as the circulating platelets were used up, and both cutaneous purpura and massive hemorrhages occurred. Bleeding times were also found to be unduly prolonged. Cases which weathered the 1st few weeks often developed, still later, a severe anemia with a red cell count of one million or less. On biopsy the marrow of such cases was sometimes aplastic and sometimes hyperplastic.

It was interesting that in the largest survey yet reported no instances were found in which persons who had entered the areas after the explosion became victims of residual radiation.

RADIOACTIVE PHOSPHORUS

Many of the new radioactive isotopes produced by nuclear bombardment in the cyclotron or elsewhere are being tested both as therapeutic agents and as tracer elements to elucidate biochemical reactions in the body. The most conspicuous therapeutic find as yet is radioactive phosphorus or P^{32}, which with a half-life of 14.3 days is converted into sulfur after emitting a beta-ray.

Having the chemical properties of phosphorus, P^{32} is taken up by those tissues having a high phosphorus content, and especially by those having the most active growth and metabolism. The high concentration initially in the circulating red and white blood cells and later in the bone marrow, lymph nodes, liver and spleen makes possible the selective radiation of these tissues.

The best therapeutic results have been reported in polycythemia vera, in which there is an idiopathic overproduction of red blood cells. Over 200 treated cases have been reported, of which 90 per cent had satisfactory remission of their disease, often lasting over two years. Since the radiation affects white cells and platelets, careful blood counts are required following the intravenous administration, but the opinion of those who have treated the greatest number of cases is that radioactive phosphorus "is probably the best therapeutic agent available at the present time for polycythemia vera."

P^{32} has also been used in the treatment of leukemia and of various neoplastic diseases. In leukemia, the results are much the same as those obtained with x-rays, but radiation sickness is negligible. Hodgkin's disease and lymphosarcoma do not respond as well as to x-rays.

CYTOCHROME-C IN TISSUE ANOXIA

Among the substances which promote tissue oxidation are the cytochromes. It is believed that their action makes possible the resynthesis of adenylpyrophosphate, which, by release of the phosphate-bond aids in the transfer of tissue energy. It has been shown in animals that additional cytochrome will prevent the diminution of tissue organic phosphates which occurs in tissue anoxia.

Experiments indicate that cytochrome-C, which can be readily prepared from beef-heart, is non-antigenic and can be injected intravenously. After severe hemorrhage in dogs, it is possible with large doses to resuscitate a number of animals which otherwise would have succumbed to irreversible shock. In human beings subjected to anoxia by breathing 10 per cent oxygen, the electrocardiographic changes which occur in susceptible individuals have been reported to be regularly prevented. Electroencephalographic changes and impairment of visual discrimination similarly produced have been overcome.

The possible role of this material in severe shock and in high altitude flying is obvious.

CURARE IN MUSCLE SPASM

Curare has long been recognized as a poison with paralytic action upon the myoneural junction. In recent years the isolation of the active principle, d-tubocurarine, in pure crystalline form, has made it possible to conduct accurate pharmacological studies of the compound. Its clinical use became feasible when it was found that intramuscular administration in a vehicle of white wax and peanut oil led to a prolonged absorption that was consistent and yet at such low levels as to avoid unpleasant side effects. It was possible to produce a partial block of the myoneural junction sufficient to prevent transmission of abnormal nerve impulses resulting from a local disease process and yet insufficient to affect voluntary muscular action.

Tubocurarine in oil and beeswax has been shown to relax muscle spasm in various orthopedic conditions. Patients with acute low-back strain almost invariably obtained relief of major pain and were able to relax and sleep without sedation. Localized pain, however, continued in the region of actual disease where it was capable of local signature and proved useful in the diagnosis of underlying pathology. Muscular soreness also persisted, presumably as the sequel of prolonged contraction and ischemia. Where the spasm and major pain were secondary to a continuing stimulus such as nerve root compression, radicular pain persisted and the reflex spasm recurred as the effects of the tubocurarine wore off. Temporary relief was thus obtained in many cases, diagnosis was aided, and in those instances where reflex spasm was perpetuated by the vicious cycle of pain and splinting, permanent relief was at times obtained.

SURGERY

By Edwin J. Pulaski
Chief, Surgical Research Unit, Brooke Army Medical Center

GENERAL

Advances in basic sciences continue as in previous years to spearhead the progress in surgery. During 1946, wartime experiences, including many developments kept secret for reasons of military security, were published and evaluated in regard to civilian practice. Some of the outstanding contributions of the year are presented here.

STREPTOMYCIN

Streptomycin, the antibiotic developed from the mold, Streptomyces griseus by Waksman and his co-workers, now appears to have a place in the treatment of certain important gram negative bacterial infections. The types of infections most influenced by streptomycin are usually unaffected by penicillin and sulfonimides. The intramuscular injection of streptomycin in suitable doses produces therapeutic concentrations of the drug in the blood. Following injection streptomycin diffuses fairly rapidly through the body and it is mobilized for excretion in the urine, and to a slight degree in the bile. Unfortunately, streptomycin is very poorly absorbed from the gastrointestinal tract, and this route of administration can not be utilized for therapy of generalized infections. The antibiotic, when taken orally, is not destroyed in the gastrointestinal tract, and a large percentage of it is excreted with the feces. It sterilizes susceptible bacteria as it is passed along.

Streptomycin may be administered locally for the treatment of infections involving the brain, meninges, ear, pleural cavity, and the open wound. The usual daily dosage of streptomycin parenterally administered for the treatment of infections is 1 to 3 grams. The usual oral dosage for the treatment of enteric infections is 2 to 4 grams. These conditions have been found to date as indications for streptomycin therapy: (1) tularemia, including the pneumonic and the glandular types, (2) acute bacillary dysentery, (3) uncomplicated gonorrhea in the male, (4) bacteriemia due to organisms sensitive to the action of streptomycin in which the focus receives concomitant, appropriate surgical management, (5) infections of the urinary tract due to susceptible organisms uncomplicated by the presence of calculi or undrained pus, (6) meningitis due to Hemophilus influenzae and other gram-negative susceptible organisms.

Limited experience suggests that streptomycin administered parenterally and by nebulization is of value in the preparation of patients for pulmonary resection. The antibiotic is very effective in the treatment of tuberculosis experimentally produced in animals. It is too early to make final statements at this time concerning the value of streptomycin in the treatment of pulmonary and extrapulmonary tuberculosis in man. Extensive trials are now being made in a few clinics. Streptomycin is of doubtful or no value in the treatment of typhoid fever, undulant fever, chronic osteomyelitis and idiopathic nonspecific ulcerative colitis. Under certain conditions organisms develop resistance to streptomycin, both in the test tube and in the body, with a speed much greater than is noted with penicillin or the sulfonamides. The degree of sensitivity of organisms to streptomycin as determined in the laboratory, can be used as an index of the probable effectiveness of the treatment of infections in the patient with streptomycin.

This drug has a low but definite toxicity. Most reactions are not serious and disappear on withdrawal of the drug. On the other hand, if treatment with streptomycin is prolonged, that is, for periods beyond 2 weeks, irreversible toxic effects on the eighth cranial nerve may occur in an occasional patient.

PENICILLIN IN BEESWAX AND PEANUT OIL

Considerable information has accumulated regarding the suspension of penicillin in beeswax-peanut oil mixtures as a practical and effective method which permits a single daily intramuscular injection of penicillin instead of the usual eight injections a day. Usually 300,000 units to 500,000 units are given. Single daily injections have been shown to be successful in the treatment of gonorrhea and in a variety of other infections. There is a trend underway to extend this single injection technique to the treatment of infections in which a very high blood level is not a requisite. The most important drawback to this method is the occasional allergic reaction in the sensitive patient to either the penicillin or the beeswax-peanut oil base. It is of importance that these reactions are transient in nature.

PENICILLIN TYPES

Recent studies have shown that commercial penicillin consists of several fractions, alphabetically labeled, which differ in activity and potency. When penicillin was first produced commercially by the surface culture method, fraction F predominated. Later when deep fermentation came into use G was the predominant type. Following changes in strains of mold and methods of production some commercial preparations contained a mixture which is F, K and G penicillins. On these latest developments, the Council on Pharmacy and Chemistry of the American Medical Association made the following report which is here reproduced.

"(1) Commercial penicillin has consisted of varying mixtures of one or more of the five known fractions, F, G, X, K and dihydro F.

"(2) Penicillin K is apparently rapidly destroyed or eliminated in the body, and therapeutic levels are not achieved or maintained in the body fluids following ordinary doses.

"(3) Commercial penicillin now available is predominantly penicillin G, which is known to be effective although some of the penicillin produced for a few months in 1945 may have had relatively less G and more K than previous or subsequent batches.

"(4) As far as facts are available, penicillins F and X are as active clinically as penicillin G. Further research will be necessary to define their usefulness with preciseness.

"(5) Since precise methods are not available for the routine determination of the quantities of each fraction in each batch of penicillin, the National Research Council has recommended increased dosage of penicillin as a safety precaution; particularly in the treatment of syphilis, in which the end result of therapy cannot be evaluated for a long time.

"(6) Although bacteria have been made resistant to penicillin in the test tube, development of clinical resistance has not become a problem. Such an eventuality may be prevented, in part, by giving adequate and not minimum doses of penicillin.

"(7) All penicillin and penicillin pharmaceuticals currently on the market have been examined and certified as to safety and efficacy by the United States Food and Drug Administration.

"(8) It is possible that natural or synthetic variations of the penicillin molecule will result in the development of a clinically better penicillin. None better than penicillin G is now available." (Enormous advances have been made in our knowledge of the chemistry of penicillin. It is impossible to predict the far reaching effects of the information derived from the cumulative efforts of this wartime research.)

Crystalline penicillin G is now commercially available, and is nearly completely free of impurities. This highly purified penicillin is reasonably thermostable in the crystalline state.

PENICILLIN THERAPY IN PERITONITIS CAUSED BY RUPTURED APPENDIX

Recent experimental and clinical studies indicate the usefulness of massive doses of penicillin as adjuvant therapy in the management of peritonitis of appendical origin. This beneficial effect is remarkable since earlier studies with usual doses of penicillin cast doubt on the efficacy of the antibiotic in mixed infections, due to the penicillin destroying action of fecal gram negative bacteria. It has now been demonstrated that massive doses of penicillin selectively inhibit the gram positive bacteria of peritonitis. This action interferes with bacterial synergism which is an important feature of peritoneal infections. The remaining gram negative bacteria may then be eliminated by the defense mechanisms of the body.

The principle of massive doses of penicillin has been applied to other ordinary intractable infections, notably subacute bacterial endocarditis. Daily doses in excess of one million units for a month or longer may be given without apparent untoward reactions or harmful effects. Additional organisms may now be added to the list of penicillin susceptible ones.

LOCAL HEMOSTATIC AGENTS

During the war years, three new local hemostatic agents were introduced. These were human blood fibrin foam and gelatin sponge, both of which are soaked in thrombin solution prior to use, and oxidized cellulose gauze which is used in the dry state. All are packed in sterile form. The three agents have two common characteristics which make them desirable for use in all fields of surgery: (1) they are effective in the control of venos and capillary hemorrhage, (2) they are absorbed by the human body, with minimal but varying degrees of foreign body reaction.

Agents of this type were developed for use in neurosurgery but their use is now extended to other fields. They are particularly valuable in the control of hemorrhage in the liver, gall bladder bed, in areas denuded by the freeing of adhesions and in control of hemorrhage in inaccessible places where it is impractical to apply sutures or ligatures. It is too early to decide which agent is superior, or to outline any specific indications for the individual materials. Gelatin sponge is said to produce less foreign body reaction than the oxidized cellulose gauze.

All are contraindicated in the presence of infection except as a lifesaving measure in the control of inaccessible hemorrhage. Even though the use of local absorbable hemostatic agents is still not fully defined, these agents have proven so valuable that they are certain to be a permanent part of the surgeon's armamentarium.

The oral use of buffered thrombin in the arrest of certain types of gastric hemorrhage has been advocated recently. Thrombin is gradually inactivated in acid solution and actually destroyed at pH 4.8. The acidity of the stomach normally would destroy thrombin before it could become effective. This problem has been met by the preliminary and concomitant administration of phosphate buffer solutions.

SECONDARY CLOSURE OF SOFT PART WOUNDS

Considerable experience was gained during the war with the secondary closure of soft tissue wounds. Equally important experience was derived from the controlled use in certain theaters with chemotherapy as an adjuvant to secondary suture of these wounds. The usual criteria for determining the suitability for closure include: (1) the vascularity of the granulating bed, (2) absence of necrotic tissue, (3) relative absence of exudate, (4) lack of edema, (5) healthy appearance of the marginal skin, (6) minimal temperature elevation. Best results were obtained when these criteria were met and secondary closure was elected at the time of removal of the first dressing. Secondary closure after two or more dressings usually required chemotherapy to prevent infection in the wound. Important conclusions derived from these studies are (1) no chemotherapy is of value in the prevention of toxemia caused by the absorption of the products of tissue decomposition which occurs in wounds not properly debrided, (2) local application of sulfonamide drugs is of no value, (3) one of the most important wound pathogens is the hemolytic streptococcus. Systemically administered sulfonamides or penicillin effectively control impending streptococcal infections of wounds. It is stressed that no method of chemotherapy can substitute for technical and surgical management of wound suppuration.

DRESSINGS FOR WOUNDS

Dressings for open wounds such as burned areas and deep surface wounds should have certain physical properties. These include a low coefficient of friction so removal without trauma is possible, a fine mesh to block growth of granulation tissues into interstices, inertness and easy sterilization. Vaseline dressings are widely employed because they have come nearest to meeting these criteria. This type of dressing has the objection of causing maceration of the tissues, and, being a foreign body, of provoking exudation. During the war experimentation with other types of dressings than vaseline brought forth at least three substitutes which meet the aforementioned criteria, yet are free of the objections of vaseline. Included are (1) parachute nylon (2) rayon and (3) fiberglass. These materials are sterilized in appropriate sizes by dry heat or autoclaving. They are placed into the wound either dry or moistened with isotonic saline and trimmed to meet the requirements. Dry dressings are placed over the dressing next to the wound. At the time of change of dressings it is usually easy to remove the entire dressing mass without trauma. In an occasional case moistening the dressing before removal is necessary. Buds of granulation tissue do not penetrate dressings of this type and hemorrhage attending the change of dressings is kept at a minimum.

THERMAL BURNS

The war experience led to the development of new techniques and concepts in the management of the severely burned patient. The local treatment of the burned area and the management of the systemic effects of this type of injury were recognized as two distinct entities requiring equal and simultaneous attention. Conspicuous in the local therapy was the abandonment of tannic acid coagulation of the burn in favor of vaseline and pressure dressings, so that skin grafting could be accomplished as early as possible. The incidence of contraction deformities has been lowered by this means. The systemic treatment has focused attention on the huge losses of protein, salt and hemoglobin and the need for their replacement.

PYRUVIC ACID METHOD IN THE LOCAL TREATMENT OF BURNS

In 1944 a report appeared on the use of pyruvic acid method of promoting the separation of slough in experimental burns in animals. The method has been applied to a limited number of extensive deep burns in patients and shows promise. The application of pyruvic acid with a pH of 1.9 in patients caused a rapid separation of the slough of a deep thermal burn without significant damage to the living tissue. The result is that the wound is immediately acceptable for extensive skin grafting regardless of what the bacterial culture shows. The ultimate objective of modern burn therapy is application of skin grafts, that is, the conversion of the open wound to the closed wound. The advocates of pyruvic burn therapy state that the method permits advancement of early closure of the wound. The 30 reported cases in most instances were grafted within 20 days after burning, a significant advancement.

ANEMIA IN THE SEVERELY BURNED PATIENT

Recent studies have thrown considerable light on the fate of the red blood cells and hemoglobin in the severely burned patient. In one such study, tagged or radioactive red blood cells were used. It was demonstrated that severely and deeply burned patients may destroy 100 to 200 cc of red blood cells per day in the first three or four days after burning. Later the patients may develop a red cell disappearance which is probably a result of the so-called acute toxic loss of protein and wound infection. In these cases occasional small blood transfusions were shown to be inadequate. A practical aspect of this study is the conclusion that replacement therapy in burn shock must be directed toward the restoration of all deficits in the circulating blood. Frequent whole blood transfusions will fill these requirements more nearly than any other single agent. Water and electrolytes can be administered to best advantage by mouth in most patients, and this is the route of choice. The repeated administration of whole blood transfusions to correct the anemia has the additional advantage of helping to restore nitrogen balance equilibrium, an important factor in wound healing.

RADIOACTIVE ISOTOPES AND NITROGEN MUSTARDS

Several interesting by-products of the chemical warfare research program show promise as diagnostic as well as therapeutic aids in medicine. Included is BAL (British Anti-lewisite) which, given early is a potent antidote for acute heavy metal poisoning, particularly mercury and arsenic. Research on poison gases resulted in the development of Nitrogen Mustards, one of which, bis (chloroethyl) methylamine hydrochloride (Dema), may find chemical application because of its toxic effects on the bone marrow. Experimental work shows that members of this chemical group have a striking arresting effect on selected cases of Hodgkins disease, lymphosarcoma, leukemia and polycythemia vera. The result is not unlike that obtained following radiation therapy. These drugs must be used with caution since the margin of safety is narrow. Optimal dosage schedules remain to be determined. Like radiation therapy, these substances do not cure.

The possibility of the use of radioactive isotopes of certain elements for the treatment of disease has been entertained for many years. Difficulty of production made the procurement and cost of such isotopes prohibitive as regards extensive clinical research. Newer methods of producing isotopes are being developed as by-products of atomic energy research. Radioactive phosphorus shows promise in the treatment of leukemia and polycythemia vera. An apparent advantage is the same effect as that obtained with x-rays but without any accompanying radiation sickness. The full possibilities of radioactive phosphorus are being explored.

Radioactive iodine is obtained by bombarding organic iodine. When administered orally, the thyroid gland does not differentiate between radioactive and non-radioactive iodine. Distribution of radioactive iodine in the body may be followed by the use of the Geiger counter. This isotype is now being evaluated as a therapeutic agent for hyperthyroidism and for cancer of the thyroid gland. The beta rays from radioactive iodine deliver within the thyroid an internal radiation which is physically similar to roentgen radiation. The scheme of therapy is not yet defined, but limited observations show radioactive iodine is indicated in hyperthyroidism when the patient is sensitive to ordinary iodine or thiouracil, or it is not a good surgical risk. (Thiouracil still remains an "experimental drug" in the treatment of toxic goiter because of potential untoward depressant action on blood forming organs. Various derivatives are being explored in search of a drug with a wider margin of safety.)

A severe case of cancer of the thyroid, with multiple metastases and thyrotoxicosis resulting from metastic tumors, was brought under complete control following administration of radioactive iodine for a period of 2 months. While this case has been followed for 3 years and no secondary ill effects have resulted, there is much work yet to be done on determination of proper dosage and determination of potential side reactions.

VASCULAR SURGERY

A new diagnostic and therapeutic adjuvant has been introduced for the study and treatment of peripheral vascular disease and causalgic states. Tetra-ethyl ammonium bromide, in a 10 per cent solution, will produce a temporary blockade of the autonomic nervous system following parenteral administration, and promises to supplant such standard procedures as sympathetic nerve block. As the drug produces vasodilatation, a lowering of blood pressure results, and this must be borne in mind in using this drug.

Advances in vascular surgery have included as a routine procedure ligation of the major veins in the treatment of venous thrombosis of the lower extremities. Where the thrombosis extends into the pelvic veins, ligation heretofore has been considered a heroic measure. Present experiences in many clinics demonstrate the feasibility of ligation of even the inferior vena cava, or the common iliac veins. These procedures are frequently life saving.

SURGICAL TREATMENT OF CONGENITAL PULMONARY STENOSIS

A new and unique chapter in the surgery of congenital cardiac defects has materialized. The most recent advance concerns an operation designed for the cure of patients with pulmonic stenosis. The operation had its genesis in an experiment on animals, proving that one can anastomose without great risk, the end of one of the arteries arising from the arch of the aorta to the side or distal end of one of the pulmonary arteries. The increase in the pulmonary arterial blood flooding which results is followed by a gratifying elevation in the oxygen carrying capacity of the blood. After extensive experimentation on laboratory animals, the operation has been carried over to patients with pulmonary stenosis. The experience to date with the operation exceeds 100 cases, the patients ages ranging from five months to 25 years.

The results following operation in most instances have been even more striking than in the experimental animals. Children who are disabled by their congenital cardiac defects sustain and survive the operations much better than laboratory animals. As a result of the operation, collateral circulation is spontaneously developed in the stenotic child so that cyanosis disappears and his activity can be increased progressively without developing dyspnea. For the anastomosis, the innominate, subclavian and carotid arteries have been used. The subclavian artery is preferred, and the carotid is least used because interference with its function has occasionally resulted in brain complications. This achievement represents an important advance in the field of cardiovascular surgery and its implications will be watched with a good deal of interest.

TOMOGRAPHY IN THE DIAGNOSIS AND STUDY OF LUNG CAVITIES

A tomograph is defined as "a device by which it is possible to make an x-ray picture of a selected plane or layer in the body at any desired level and undisturbed by the shadows of other tissues, even bone, above or below this level. It is accomplished by giving the x-ray tube a curvilinear motion which is synchronized with a corresponding but opposite movement of the plate-holder; the unmoving center between them being the only part appearing on the plate after development."

The use of this device, while not new, has been gaining new advocates, particularly for the examination of the lungs. With tomography it is possible to demonstrate cavities in the lung with greater clarity and accuracy than by the usual x-ray technique. This applies to cavities due to carcinoma as well as other causes. It is exceedingly useful also as an aid in determining changes in the chest picture during the follow-up period after therapy. This technique has the advantage of detecting lesions in situations not visible or reachable by lipiodolography, bronchography or bronchoscopy. This technique should prove to be a valuable diagnostic aid to routine radiography of the chest.

TREATMENT OF MEDIASTINAL TUMORS BY SURGERY

The many advances in physiology, biochemistry and bacteriology, and their application to the fundamental problems of anesthesia and management of the patient as a whole, have resulted in making chest surgery a relatively safe procedure. A report on cases of mediastinal tumors at Army Thoracic Centers in the United States, based on 107 cases studied, bears out this assumption. In this series there was not a single operative death. Eighty-nine benign tumors in the mediastinum were removed successfully. All of the patients recovered promptly and returned to full activity. Where the malignant tumors were operable, equally good results were obtained. It is now felt that opening the chest to establish a definite diagnosis of a mediastinal mass is a safe and justified procedure.

LOBECTOMY AND PNEUMONECTOMY FOR PULMONARY DISEASES

While these surgical procedures have been utilized for a number of years for bronchiectasis, chronic lung abscess and neoplastic disease, it is only in the past five years that they have been employed widely in the treatment of pulmonary tuberculosis. In this condition lobectomy and pneumonectomy do not supplant the older standard forms of therapy, but are used in circumstances where the infection is not likely to be controlled by other means. The availability of such chemotherapeutic agents as streptomycin and penicillin has broadened considerably the role of surgical management of suppurative pulmonary disease.

GASTROINTESTINAL TRACT: SECTION OF THE VAGUS NERVES OF THE STOMACH FOR TREATMENT OF PEPTIC ULCER

Complete division of the vagus nerves to the stomach for treatment of intractable duodenal ulcer was carried out on 2 patients in 1943. These operations followed years of experimental work on the effect of the vagus nerves in experimental animals.

It has been shown that the chief secretory abnormality in ulcer patients is the secretion of abnormally large amounts of gastric juice in the intervals between meals, particularly at night when the stomach is empty. There is also evidence that this hypersecretion is neurogenic in origin and that gastric secretion can be greatly diminished by section of both vagus nerves to the stomach. Patients with peptic ulcer have been shown to have hypertonicity and hypermotility of the stomach during a resting period, and these reactions are returned to normal following vagus section.

The results with the original two patients in 1943 were very encouraging and the operation has now been performed on over 250 cases with a very high percentage of cures. Duodenal ulcers have been proven by x-ray and gastroscopy to have healed in, as early as, 7 days following vagus section. Secondary gastroenterostomy has been necessary in some patients to relieve the obstruction due to extreme scarring and fibrosis which was present at the time vagus section was undertaken.

No cases have, of course, been followed for longer than 3 years, but the salutary effect produced by vagotomy has continued throughout the period of observation. The only undesirable side effect which has followed vagus section has been distention and dilatation of the stomach which has occurred in some instances. This reaction has responded spontaneously in some patients, while in others it has been obviated by gastroenterostomy. A large percentage of the vagotomized patients have been able to resume a normal life following surgery with no restriction of diet and no medication. It is entirely possible that section of the vagus nerves may soon replace subtotal gastric resection for control of intractable peptic ulcers.

PUBLIC HEALTH

By William R. Willard
Assistant Professor, Yale University School of Medicine

WORLD HEALTH ORGANIZATION

The Year 1946 was the first full year of "peace," and Public Health was caught in the turmoil of "reconversion." In spite of this, notable progress was made in many directions.

"The most far reaching step in history to promote health among the World's people was the unanimous adoption of the Constitution of the World Health Organization and its signature by representatives of 61 governments in New York City on July 22, 1946" (Parran and Boudreau). The United Kingdom and China have already ratified the Constitution, and when 24 or more United Nations ratify it, the World Health Organization will come into being. Pending ratification, the existing international health services will continue. The existing services, it is planned, will be gradually merged into the World Health Organization. Anticipating approval of the United Nations' Assembly, the United Nations made funds available for the interim work of the World Health Organization.

This work will be conducted by an Interim Commission consisting of representatives of 18 governments. Within six months of organization, it will call a World Health Assembly to select the permanent location of the World Health Organization and to appoint a Director-General. Meantime the Commission will assemble a staff of experts and begin to negotiate agreements with the United Nations and other organizations so that it can assume the obligations of the Health Section of the League of Nations and the Office International d'Hygiene Publique. The Commission has already assumed the epidemiological functions of UNRRA, and it will meet any urgent health problems that may arise. Thus, in effect, a functioning organization is already in existence. The chairman of the Interim Commission is Dr. A. Stampar of Yugoslavia, and the Executive Secretary is Dr. G. Brock Chisholm of Canada. Thomas Parran, Surgeon General of the U. S. Public Health Service, is the representative of the United States.

The World Health Organization will have authority to adopt regulations concerning (1) sanitary and quarantine requirements designed to prevent the international spread of disease, (2) the nomenclature of disease and cause of death, and (3) standards of biological and pharmaceutical products. These regulations will be binding on all nations except those which specifically reject them or vote reservations within a specified time.

The World Health Organization will consist of an Assembly of three delegates from each nation which will meet annually to determine policies, name the states entitled to appoint representatives on the Executive Board, and appoint a Director-General. The Board, consisting of 18 members serving three-year terms, will meet at least twice a year to act as the Executive Board of the Assembly. The Director-General will appoint the staff of the Secretariat and serve as administrative officer of the Organization. It is provided that there shall be regional organizations within geographic areas determined by the Assembly as integral parts of the parent organization.

The International Conference was notable for its frankness, sincerity, and harmony. The Constitution was a statesmanlike document. The Preamble of the Constitution states, among other things:

"The health of all people is fundamental to the attainment of peace and security.

"The achievement of any state in the promotion and protection of health is of value to all.

"Unequal development in different countries in the promotion of health and control of disease, especially communicable diseases, is a common danger.

"Healthy development of the child is of basic importance: the ability to live harmoniously in a changing total environment is essential to such development."

The creation of the World Health Organization provides an opportunity for international cooperation in public health and for leadership in other activities (*Am. J. Pub. Health,* Sept., Nov., Dec., 1946, 36: 1041, 1267, 1315, 1466).

THE NATION'S HEALTH

During 1946 the health of the American people was remarkably good. The expectancy of life at birth advanced to 65 years. The mortality rate, as judged by the experience of Metropolitan Life Insurance Company policyholders during the first ten months of the year, exceeded only slightly that for the first ten months of 1945 (742.2 compared with 739.9 per 100,000 population). Unusually favorable rates during most of the year were offset by a mild influenza epidemic during the winter of 1945-46, and as usually occurs in such epidemics, the mortality rates for tuberculosis, pneumonia, and the chronic diseases increased. The death rates from home and automobile accidents, suicides and homicides, all at low points during the war, increased sharply to 1941 levels. The death rate from automobile accidents was 28 per cent above that for 1941 during the first six months of the year. However, death rates for typhoid fever, scarlet fever, syphilis, and diarrhea and enteritis reached all-time lows (*Met. Life Ins. Co. Statistical Bulletins,* vol. 127, 1946, May p. 1, July p. 7, Aug. p. 9, Nov. p. 17).

POLIOMYELITIS EPIDEMIC

Three communicable diseases presented special problems. The United States was visited by the worst epidemic of poliomyelitis since 1916; 24,517 cases being reported as of Nov. 30. As is customary with poliomyelitis, the epidemic was spotty, hitting hard in Minnesota, the Mississippi Valley, Florida, Colorado, the Dakotas, Wisconsin, California, and other widely scattered regions. Federal, state, and local health agencies, in cooperation with the National Foundation for Infantile Paralysis, by advance planning, pooling of resources, and mobilization of personnel skilled in poliomyelitis work, were able to minimize the effects of the disease by insuring adequate treatment of victims. (Report by Basil O'Connor, President National Foundation for Infantile Paralysis on 1946 Polio Epidemic.)

DIPHTHERIA

Although diphtheria was reported 14,777 times during the first 48 weeks of 1946, compared with 16,744 times for a comparable period in 1945, this disease remained a problem in many areas. The prevalence of the disease is attributed, in part at least, to returning Servicemen carrying virulent strains of diphtheria organisms acquired in foreign countries. Five per cent of soldiers sent to Army hospitals because of skin infections acquired in the tropics were found to be carriers of virulent diphtheria. This disease continued to attack somewhat older age groups than formerly. The need for continued efforts to immunize appropriate population groups exists (*JAMA,* 131: 1053, 1071, July, 1946).

SMALLPOX

Smallpox reached an all-time low in 1945 with 346 cases reported, compared with 765 in 1943 and 48,920 in 1930. It was apparent that this low would be maintained in 1946 with only 326 cases reported during the first 48 weeks of the year. In spite of this, a small epidemic occurred in the State of Washington with 61 cases and 15 deaths, and another in California with 13 cases. Vaccination programs were organized rapidly on a large scale, and epidemics were quickly extinguished. The epidemics were traced to soldiers infected with smallpox recently returned from Japan and Korea. This experience points to the need for continued vigilance against this disease and an increasing number of vaccinations (*Public Health Reports* 61: 911, 1860-61, June 14, 1946, Dec. 20, 1946).

The fears held by some that soldiers returning from the tropics would introduce serious epidemics of various diseases into the country have not materialized.

PERSONNEL PROBLEMS

As men were released from the Armed Services, many returned to their positions with official and voluntary health agencies, but many others did not. With the increasing demands for medical and public health services, health agencies were confronted with a serious shortage of personnel of all kinds, particularly of qualified professional personnel.

This situation resulted in a re-examination of personnel practices, salaries, working and living conditions, and other factors which determine whether people will enter or remain in the public health field. The American Public Health Association, through its Committee on Professional Education, has declared that salaries must be increased substantially. The nursing organizations in cooperation with the U. S. Bureau of Labor and Statistics began to query nurses by questionnaires and interviews to determine the reasons nurses left the profession, and to inquire into other socio-economic factors surrounding their positions (*Am. J. Nursing* 46: 811, Dec., 1946).

As a continuation of its efforts to increase the quality of professional workers in public health, the American Public Health Association augmented the services of its Merit System Unit which aids states in the effective application of merit system techniques in the selection of public health personnel (*Am. J. Pub. Health,* 36: 793, 1223, July and Oct., 1946).

PROFESSIONAL TRAINING

To ensure adequate professional training, the Association's Committee on Professional Education established requirements, visited and accredited schools of public health. For the academic year 1946-47, the following schools were accredited:

For the Master of Public Health

- Columbia University
- Harvard University
- Johns Hopkins University
- University of California
- University of Michigan
- University of Minnesota
- University of North Carolina
- University of Toronto
- Vanderbilt University
- Yale University

For the Doctor of Public Health

- Columbia University
- Harvard University
- Johns Hopkins University
- University of Michigan
- Yale University

(*Am. J. Pub. Health,* 36: 244, 1038, March and Sept., 1946.)

Teaching facilities in public health as in other fields, were swamped by applicants for admission. The number was materially augmented by returning veterans who wished to study, utilizing their rights under the G. I. Bill. Although many could not be accommodated, all schools had unusually large enrollments.

In addition, heavy demands were made for training foreign students in public health in United States' institutions. The demand was by no means satisfied but a number of physicians from the Orient, South America, and elsewhere were enrolled in schools of Public Health under the auspices of the Rockefeller Foundation and the Institute of Inter-American Affairs. Likewise, many foreign visitors came to observe public health work in this country, hoping to learn of developments made here during the war (*Am. J. Pub. Health,* 36: 1260, Nov., 1946).

PROFESSIONAL RESEARCH

As a reflection of the need and growing interest in training personnel in medicine and public health, several new medical schools were either projected or started (*e.g.* University of Washington and University of Mississippi), and new medical centers were planned in various places (*e.g.* Texas, New York City). Increasing interest in research and education was shown by many financial grants for this purpose from private sources, notably private industry.

The Federal Government also contributed to the impetus given research. Even though the Kilgore-Magnuson Bill to create the National Science Foundation was not enacted, Congress promoted research by appropriating to the U. S. Public Health Service several million dollars for research. (Public Law 410 as amended.) This money was specified for grants-in-aid to public and private universities, hospitals, other institutions, and to individuals. Advisory Committees of Experts in the various fields review all applications and recommend those which seem worth while. Congress also increased the appropriation for cancer research to the U. S. Public Health Service by $1,772,000.

FEDERAL LEGISLATION AND ADMINISTRATION

In Congress and in the various state legislatures, several enactments and some administrative changes of consequence to Public Health were effected. Among the latter was President Truman's Reorganization Plan Number 2 which became effective July 16. Among other things, this Plan transferred the Children's Bureau from the Department of Labor to the Federal Security Agency where it will function as an independent entity under the Social Security Administration. Here it will be coordinated more closely with the U. S. Public Health Service. At the same time the Vital Statistics functions of the Census Bureau were transferred from the Department of Commerce to the Federal Security Agency and organized as the National Office of Vital Statistics under the Surgeon General's office of the U. S. Public Health Service.

The Hill-Burton Bill (S. 191) was enacted into law with a $3,000,000 appropriation for grants-in-aid to the states to survey hospital facilities and needs. Under the law it is planned to expend a total of $375,000,000 of Federal money during five years for hospital construction. The law requires in effect a two-to-one matching of funds by the states, with the probable result that those states most in need of additional hospital facilities, the poorer states economically, will derive least benefit because of their inability to match funds. A further handicap is the lack of funds for maintenance and operation of hospitals which may be built under this act.

The Priest Bill (H.R. 4512) known as the National Mental Health Bill was enacted, appropriating $7,500,000 to the U. S. Public Health Service for the construction of mental hospitals and laboratory facilities for research and training of personnel in the study of mental diseases. An additional $1,000,000 is available to employ personnel in assisting states in research, training of personnel, and for conducting demonstration projects; $10,000,000 is available for grants-in-aid to states in developing mental hygiene programs.

The act requires a National Advisory Health Council which consists of six outstanding experts in psychiatric diseases selected by the Surgeon General. This Council will review, approve, and certify research grants, fix the number of research and training fellowships, and advise the Surgeon General in the administration of the act. This legislation represents a major advance on the national level in attacking the nation's most challenging health problem (*Am. J. Pub. Health,* 36: 1163, Oct., 1946).

Congress also doubled the appropriation to the Children's Bureau, allowing $22,000,000 for services in Maternal and Child Health and for Crippled Children. The May Act was made permanent, and the Social Protection Division of the Federal Security Agency was continued when it became apparent that commercialized prostitution was increasing in a number of areas. These measures will help in the campaign against venereal diseases.

STATE LEGISLATION

Parallel with this Federal activity, most states were active in meeting public health needs. Although only 66 per cent of the population in the United States is now served by full-time health departments, definite progress was made, particularly in Illinois, in organizing local health departments. In some areas only personnel is lacking to complete the organization. The chronic disease problem is receiving increasing attention with the establishment of Divisions or Sections of Geriatrics in the State Health Departments of Indiana and South Carolina (*Am. J. Pub. Health,* 36: 202, 693, Feb. and June, 1946). Other states have organized or projected Cancer Control Divisions (*e.g.* Maryland, Kansas, Louisiana). Ohio appropriated $3,727,000 to improve the care of the mentally ill. Increased appropriations for public health will permit many areas to attack major problems, fill existing gaps, and level up the public health services of the nation. This is particularly true in New York State where Governor Dewey's program was enacted, which among other things, made available approximately $5,500,000 for local health services and $6,000,000 for tuberculosis (*Am. J. Pub. Health,* 36: 526, May, 1946).

SCHOOL HEALTH

The National School Lunch Bill (H.R. 3370), enacted in 1946 by Congress, made available $75,000,000 in the form of grants-in-aid to state educational agencies through the Department of Agriculture. The permanent support of school lunch programs, by this act, has become a national policy (*Am. J. Pub. Health,* 36: 828, July, 1946).

Although no other outstanding development occurred in the field of school health, interest increased, program evaluation continued, and experimentation toward more effective programs progressed. The emphasis was on cooperation between Departments of Education and Health in planning, preparation of materials, and integration of medical and educational services. This is in keeping with one of the recommendations made by the National Committee on School Health Policies in its revised report entitled "Suggested School Health Policies," published in 1945 by the Health Education Council, 10 Downing Street, New York City.

VOLUNTARY HEALTH AGENCIES

The effect of the Gunn-Platt report on voluntary health agencies, issued in 1945, continued with many agencies re-evaluating their programs. With a grant from the Rockefeller Foundation, the National Health Council, under the leadership of a Citizens Planning Committee and a new director will assist in the development of cooperative enterprises. These will consist of joint planning and services, the organizing and strengthening of loca health councils, the conducting o demonstrations in the coordination o local health services, and providing consultation aid (*Am. J. Pub. Health* 36: 427, April, 1946).

The six national nursing agencies believing that their respective interests might be served better by closer coordination, employed the Rich Associates, Inc. to make a structure study. The recommendations of this survey, calling for the unification of the six national agencies into one, is now under consideration (*Am. J. Nursing,* 46: 648, Oct., 1946).

APPLICATION OF SCIENTIFIC ADVANCES

Discoveries of recent years found increasing application in medical and public health practice. Recognizing the value of plasma, gamma globulin, albumin, and other products derived from blood, the American Red Cross and several states are giving serious consideration to means of ensuring an adequate supply and proper distribution of these products for civilian use. Both Michigan and North Dakota have begun to collect, process, and distribute plasma on a statewide basis, and Massachusetts is developing a similar program. Health Departments must assume, if nothing more, a regulatory function in seeing that the public is protected from diseases carried by these products and ensuring their ready availability (*Am. J. Pub. Health,* 36: 1, 309, 389, Jan., March, April, 1946).

The discovery of the Rh factor is making possible the saving of many infant lives, and health department laboratories in a number of areas began to type blood specimens submitted by physicians for Rh factor (*Am. J. Pub. Health,* 36: 101, Feb., 1946).

The value of vaccine against influenza types A and B has been established, and will find increasing application for civilian use. During the fall of 1946 it was widely utilized in various industries.

Although penicillin has not been completely evaluated, it has already earned for itself an essential place in the treatment of gonorrhea, syphilis, and many other infections. Streptomycin offers promise of aid in the treatment of various diseases, including tuberculosis, but this product is still under study and is not generally available.

New drugs of promise have been developed for malaria (*Am. J. Pub. Health,* 36: 432, April, 1946), and the use of DDT in conjunction with other measure should make possible the eradication of this disease from the United States. DDT is finding many uses in the control of insects of public health importance, of which the treatment of pediculosis in school children is a lesser example. The new rodenticides ANTU and 1080 will also fill a need.

MEDICAL CARE

This subject continued to loom large in the attention of the medical and public health professions. Extensive hearings were held on the Wagner-Murray-Dingle Bill (S. 1060), which in Title 2, proposes compulsory health insurance, federally administered. The Taft-Smith-Ball Bill (S. 2143) was introduced. This bill, among other proposals, called for the development of programs of medical care for persons of low income only, these programs to be administered by the states and financed in part from Federal grants-in-aid to the states.

While the great debate raged over these proposals, voluntary plans for providing medical care on a pre-payment basis increased in number and membership. As of June 30, almost 3,500,000 persons were enrolled in medical society plans and the number was constantly increasing (*J.A.M.A.,* 132: 584, Nov. 9, 1946). Twenty-seven of these plans were awarded the Seal of Acceptance by the Council of Medical Service of the American Medical Association, and others awaited action by the Council. Blue Cross Hospital insurance plans approached an enrollment of 24,000,000 persons.

The Voluntary Health Insurance Plan of Greater New York completed organizational work. If successful, it will stimulate the organization of group medical practice in combination with pre-payment because, under this plan, medical care will be rendered only by groups of physicians (*Am. J. Pub. Health,* 36: 912, Aug., 1946).

The Maryland Program of Medical Care for the indigent and medically indigent went into effect July 1, 1945 with most counties actually operating under the program by Jan. 1, 1946. This program is the first of its kind to be operated by a State Health Department, and is being closely watched by all interested in the administration of medical care plans. The medical profession is paid a fee on a service basis and is actively cooperating. During the month of April, 1946, 2,147 persons out of a population of about 1,000,000 received care. Ninety-five per cent of these persons were on relief. Most were suffering from serious illness. About half were aged 60 or above (*J.A.M.A.,* 132: 326, Oct. 12, 1946).

MEDICAL CARE FOR VETERANS

Medical care for veterans was in the process of re-organization. Legislation creating a Department of Medicine and Surgery in the Veterans Administration was enacted early in the year (Public Law 293), and Major Gen. Paul R. Hawley was placed in charge. Continuous efforts to secure the best qualified men have been made, and rigid civil service procedures for appointment were relaxed. Contracts were made with medical societies to enable veterans to receive medical care at home when practicable. A building program for Veterans Hospitals near medical centers was projected. Arrangements by which medical centers assisted in staffing Veterans Hospitals were effected in a number of instances, and these arrangements are working to the mutual advantage of the institutions concerned.

HOSPITAL SERVICES

Integration and improvement of hospital services is being attempted under the Regional Hospital Plan at Rochester, N. Y. This program is financed by a grant from the Commonwealth Fund for a five-year period. Rural hospitals in the area will secure the advantages of contact and some interchange of staff with a city teaching center. Consultation and educational services will be provided for rural hospital staffs, and hospital facilities will be enlarged and improved as needed. If successful, this plan will be tried in other areas (*J.A.M.A.,* 130: 804, March 23, 1946).

INDUSTRIAL MEDICAL SERVICES

The National Bituminous Coal Mine Wage Agreement of 1946 was the most significant development on the Industrial Front. Under this Agreement, two funds are created: (1) Welfare and Retirement Fund by a 5 per cent per ton impost on all coal produced; and (2) Medical and Hospital Fund by a check-off from the miners' pay. Medical services, under this agreement, were transferred from the control of coal operators to the Union, and no doubt this is a precedent which will be followed in many other collective bargaining agreements (*J.A.M.A.,* 132: 453, Oct. 26, 1946).

Also of significance was the first joint meeting of the four large labor organizations, A. F. of L., C. I. O., R. R. Brotherhoods, and National Farmers' Union in St. Paul during February 1946 to discuss the development of health programs of interest to Labor. Plans were made to assist appropriate governmental agencies in the development of these programs. Additional meetings were scheduled. As in international relations, so in labor relations, it was possible to submerge rivalries in order to work for the common good in the field of public health.

ENVIRONMENTAL SANITATION

The failure of the Wagner-Ellender-Taft Bill to be reported out of the House Committee on Banking and Currency has delayed the formulation of a national housing policy and the development of slum clearance programs. However, the assignment of sanitary engineers from the U. S. Public Health Service to the National Housing Agency should ensure improved sanitation in Veterans' housing developments.

Progress in milk sanitation was recorded when the U. S. Public Health

Service reported that 192 municipalities require all market milk to be pasteurized; 277 permit raw milk for market sale only if it is certified; three others permit the market sale of certified raw milk only upon the prescription of a physician. Although half of these municipalities are in New York or Massachusetts, there are only 15 states with no municipality which requires market milk to be pasteurized (*Am. J. Pub. Health,* 36: 1466, Dec., 1946).

There was little progress in the abatement of stream pollution during the year, although general agreement on future legislation seems to have been reached.

DENTISTRY

By Houghton Holliday
School of Dental and Oral Surgery, Columbia University

POST-WAR ADJUSTMENT

During 1946 Dentistry endeavoured to readjust itself to caring for the needs of a civilian rather than a military population. The problem was not a simple one, and the close of the year did not find it solved. Large numbers of dental officers released from service with the Army and the Navy have returned to civil life, hoping to resume or begin a private practice. Particularly in the large cities, these dentists have been unable to find office space, and, regardless of location, it has been impossible to secure office equipment in less than six months to a year's time. As an alternative some have been able to associate themselves with older practitioners either on a full-time or part-time basis. Many have taken advantage of the opportunity afforded by the G.I. Bill of Rights to pursue postgraduate work in the various dental schools. Some are taking extended courses with a view to preparing to specialize in some particular branch of dentistry. Others are taking shorter "refresher" courses designed to help the dentist adjust himself to the needs of private practice and to bring him in touch with some phases of dental practice with which he has been out of touch while in military service.

THE EDUCATIONAL PROGRAM

While adjusting their curricula and teaching staffs to care for the large influx of postgraduate students, the dental schools, like the medical schools, have abandoned the accelerated program. The course again requires four years following the necessary college background. Students are admitted only once in a calendar year, and the summer vacation period is restored. After the chaos, the strain, and the doubtful advantage of the accelerated program under Army and Navy auspices, the return to the academic year basis is welcomed by students and faculties alike. One of the chief advantages is that teachers are now able to resume research projects that had to be put aside during the war years. In fact, a number of very important studies were reported during 1946. A brief review of some of these follows.

EFFECT OF VITAMIN K ON THE INCIDENCE OF DENTAL CARIES

It seems to be fairly well established that dental caries depends upon, first, the rate of acid formation in the mouth, and, second, the rate of neutralization of acid in the regions associated with the caries-susceptible portions of the teeth. On this basis it should be possible to retard dental caries by decreasing the rate of acid formation on the one hand or by increasing the rate of acid neutralization on the other. Most of the successful experiments to control caries have worked by decreasing the rate of acid formation, it being much more difficult to control the rate of neutralization. The reduction of acid has been accomplished by the reduction of fermentable sugars and carbohydrates in the diet or by eliminating the acids formed from the mouth by mouth hygiene. The difficulty with these methods is that they depend entirely upon the cooperation of the patient, and thus can not be expected to be successful when applied to large masses of the population.

Also, the formation of acids in the mouth may be retarded by using any one of several ingredients which interfere with the enzyme systems which are necessary to acid production. A 30-per cent urea solution used as a mouth wash destroys the enzymes and hence prevents the formation of acid from carbohydrate foods. It was found that synthetic vitamin K also had the ability to prevent the formation of acid in saliva-glucose mixtures. D. Y. Burrill, J. C. Calandra, E. B. Tilden and L. S. Fosdick have made a significant study of the effect of this later material (*Journal of Dental Research,* vol. 24, pp. 273-349). The occurrence of new decay and the progress of decay already present was studied clinically and by means of the x-ray over a period of 18 months. Commercial chewing gum was used as the vehicle for administering the vitamin K. Members of one group of 58 chewed gum containing the vitamin K for ten minutes following taking of food over a period of 18 months. Those in another group of 45 chewed gum in the same manner which did not contain the vitamin K. A third group under scrutiny did not chew gum. No restrictions were placed upon the diet of the members of any group. The vitamin K gum reduced the occurrence of new cavities 60 per cent, and the gum without vitamin K reduced the inception of cavities approximately 30 per cent as compared with the control group. Gum appears to be a very good vehicle for the vitamin K, and its popularity might make it possible to apply this method of caries control to a large group of individuals. It is hoped that further study may result in the discovery of a material or a method of applying an acid inhibitor by means of some universally used substance, such as drinking water or sugar.

ORAL CONDITIONS IN EXPERIMENTAL VITAMIN C AND B DEFICIENCY

A study of the oral conditions of five individuals deficient in vitamin C, four deficient in vitamins C and B, and two control subjects has been reported by Dan Y. Burrill (*Journal of the American Dental Association,* May 1946, pp. 594-600). Though the number of cases involved in this study is small, the findings corroborate those of several animal studies and observations made on large numbers of undernourished individuals. The deficiency was produced by a controlled diet and extended over a period of seven months. The subjects, all of whom volunteered for the study, were examined at regular intervals, clinically, by means of x-rays, and with color photographs. They were required to carry out a strict program of mouth hygiene. No oral changes of any kind were found that could be attributed to the vitamin deficiency. The author concludes that "... Even severe vitamin C and B deficiencies do not produce symptoms in clean mouths of young adults, at least in a period of seven months, and that, at least for the period of time covered by this study, dietary adequacy is less important for oral health than is oral cleanliness."

It is interesting to compare the results of this study with those reported in THE AMERICAN YEAR BOOK (1944, page 844), in which the oral conditions of children in the famine districts of Hissar were reported as being much better than those of the comparatively well-nourished children in America.

WORLD HEALTH ORGANIZATION

As a result of a declaration made at the United Nations Conference in San Francisco in 1945, an International Health Conference was held in New York in June 1946. Fifty-one nations were represented at this conference at which a charter was drawn for a World Health Organization.

This Organization has been given unprecedented power in the field of international health and will have, when ratified, a significant influence on international health. This agency will seek to throw up effective barriers against disease between and within countries, to stimulate and coordinate research on health menaces on an international basis, and to spread health information to all peoples. Dr. Frank C. Cady represented dentistry at the Conference.

DENTAL CARE IN PREPAYMENT HEALTH ORGANIZATIONS

The dental profession has long been aware of the relation between oral and general health. The public, however, has been slow to recognize this. The high percentage of young men rejected for service in the military forces has awakened the country to a greater appreciation of the importance of dental health. However, ignorance has been only one of the barriers to the more complete utilization of dentistry's services. The problem of cost is still an unsolved problem for many people. This same problem, as it applies to medical service, has been partially met by spreading the cost of hospital care over large groups of people. Something over 18,000,000 people are entitled to hospital care through Blue Cross plans alone.

The dental profession has made a study of the various medical plans in existence with a view to setting up similar plans for providing dental service. It is found that some type of dental service is provided for about one-third of the members of the various prepayment medical plans. A few organizations provide examinations, extractions, fillings, prophylaxes, roentgenograms, and surgery on a prepayment basis with an additional charge for prosthetic service. In the 229 organizations studied, the medical service is more or less complete, whereas the dental service is usually limited to roentgenograms and is included as a part of the medical diagnosis.

As a result of the study, the Council on Dental Health of the American Dental Association has recommended that experimental dental service prepayment plans be inaugurated under the supervision of the component societies. Owing to the shortage of dentists it is necessary that these plans be restricted to the care of children, where the greatest long-range benefits may be accomplished. The greatly increased demand for adult dental care during the war resulted in a reduction in emphasis on dental care for children.

SURGICAL ANESTHESIA

Oct. 16, 1946 was the centenary anniversary of the introduction of ether anesthesia into surgical practice. It is of interest that the nationwide commemoration of this event came so close to the end of a war that brought so much suffering to humanity. Though the anesthetic properties of ether had been referred to by others before Oct. 16, 1846, it remained for William Thomas Green Morton, a dentist, to administer it at that first public demonstration in the amphitheater of the Massachusetts General Hospital in Boston. Because of his courage on that day Morton will always be regarded as a central figure in that group of men who have brought the blessings of anesthesia to mankind. An appropriate ceremony was conducted in Boston on Oct. 16, 1946 under the direction of the American Dental Association.

At this celebration the production of anesthesia in limited areas without the loss of consciousness was also reviewed. Local anesthesia dates from the invention of the hypodermic syringe in 1845 and the discovery of cocaine in 1879. The highly toxic cocaine was largely replaced by a synthetic drug, novocaine, which was discovered in 1905. The use of this and similar anesthetic agents has grown by leaps and bounds in both the dental and medical professions. The methods of administering local anesthesia fall into two main groups: (1) the nerve block in which all of the nerve fibers peripherally to the point of injection are anesthetized, and (2) the infiltration method, in which the anesthetic is limited to the tissue through which the anesthetic diffuses from the point of injection.

The use of local anesthesia has greatly extended the field of dental surgery and has made it possible to perform many surgical procedures in the office that would otherwise require hospitalization and the added risk incident to a general anesthesia. Procaine (novocaine) has been the drug of choice for years, but it is to be hoped that an even safer and more effective agent may be produced as the result of extensive efforts which are being made in this direction.

DENTAL EDUCATION AT COLUMBIA

Turmoil over the announced further integration of dental with medical education at Columbia University, referred to in THE AMERICAN YEAR BOOK (1945, page 886), has partially subsided. The highly emotional reactions of a year ago have been replaced for the most part by serious appraisals of the plan, a good example of which is the following written by Dr. Arthur H. Merritt (*New York Journal of Dentistry,* March 1946, Vol. XVI, No. 3):

"One does not need to approve or disapprove of the changes which have taken place in dental education at Harvard and Columbia, to feel a certain measure of concern for the reaction of the dental profession toward these changes.

"As long as dentistry was looked upon as a craft to be practiced by craftsmen and nothing else, the public showed little interest in dental education. And this has been the situation throughout most of its history despite a hundred years in which great progress has been made. Dentistry has not been regarded by the public generally, as a learned profession. It has been thought of, rather, in terms of repair and replacement of diseased and aching teeth and the dentist as little more than a technician. With this attitude toward dentistry as a profession, little concern was felt for its educational requirements. But fortunately for all concerned, that day has passed or is passing—a fact that must be reckoned with if the recent departures in dental education are to be seen in their true perspective.

"No greater compliment was ever paid to American dentistry than that now being given to it, namely, the recognition that dentistry is an important health measure and should be made the educational equivalent of a specialty of medical practice. And to this, organized dentistry replies by pointing to its accomplishments in the past and by denying to the graduates of these schools the right to practice in certain states. This attitude on the part of the profession is given wide publicity by the lay press, creating the impression in the public mind that dentistry is more concerned with preserving its autonomy than in serving the public. This is unfortunate.

"No one, not even the Universities themselves, regard the present experiments in dental education as the final answer to the problem. They are nothing more or less than further steps in the evolution of dentistry. There can be no doubt, however, that they do represent a sincere desire on the part of those engaged in the experiment to advance the status of dental education, and as such, should be given respectful consideration by the dental profession.

"Dentistry must and will go forward. In so doing, it is as inevitable as the ebb and flow of tides that it will become more closely integrated with medicine. It cannot in the nature of things be otherwise. Pride in past accomplishments, resolutions of protest, denial of the right to practice to certain of its graduates, may delay but cannot turn back the wheels of progress.

"Dentistry's attitude, therefore, should be one of open-mindedness rather than one of opposition; wider opportunities for service rather than pride in past performances. If, in following such a course, it should become necessary to radically change dentistry's educational policy, or perhaps eventually to lose its identity as a separately organized profession, it would be a matter of little consequence if, in so doing, it was able to widen its sphere of usefulness."

VITAL STATISTICS

By Halbert L. Dunn
Chief, National Office of Vital Statistics,
U. S. Public Health Service

WARTIME BIRTH, MARRIAGE, AND DIVORCE RATES

During 1945 the birth rate for the United States declined further from the wartime high reached two years earlier. The crude birth rate for the United States in 1945, based on estimated total population, including the armed forces overseas, was 19.6 per 1,000 population, or 3.0 per cent lower than the corresponding rate of 20.2 for 1944. The birth rate was 21.5 in 1943. Rates for earlier years are shown in Table A. In terms of numbers, there were 2,735,456 registered births in the United States in 1945, as compared with 2,794,800 in 1944 and 2,934,860 in 1943.

Following the improved economic conditions of 1939, the marriage rate per 1,000 population began to increase (Table A), and many couples who had delayed establishing families started to do so. With the passage of the Selective Service Act in 1940 and the entrance of the United States into the war, the marriage rate rose further, reaching in 1942 a peak of 13.2 marriages per 1,000 population, excluding the armed forces overseas. The birth rate reached its wartime peak in the following year. The recession in the birth rate from 1943 to 1945 reflected the absence from the country of large numbers of men and the decrease in the marriage rate from 1942 to 1944.

Active demobilization of some units n the European theater began in June, 1945. By July, marriage licenses had begun to show a decided increase over the numbers issued during comparable months in the preceding year. July 1946 marked the beginning of an extraordinarily rapid rise in the number of registered births. On the basis of provisional figures it is estimated that over 3,240,000 births were registered in the United States during 1946, representing an increase of at least 18.6 per cent over the number reported in 1945.

The divorce rate rose steadily during the war period, from 2 per 1,000 estimated population (including the armed forces overseas) in 1940 to 2.9 in 1944. The divorce rate then rose more sharply, reaching 3.6 in 1945.

BIRTHS BY RACE AND STATE

White births numbered 2,395,563 during 1945, while Negro births totaled 324,264, and births to other race groups (primarily Indian, Chinese, Japanese and Filipino) amounted to 15,629. As percentages, the white comprised 87.6 per cent, the Negro 11.8 per cent, and the other races 0.6 per cent of the total number of births registered in 1945. Of total births reported in 1944, the white comprised 87.8 per cent, the Negro 11.6 per cent, and the other race groups 0.6 per cent.

Birth rates for 1945 by state of residence, based on estimated civilian population in each state, ranged from 18.4 for Illinois to 31.2 per 1,000 population for New Mexico. Four states showed higher birth rates in 1945 than in 1944, the increases amounting to 2.2 per cent for New York, 1.6 per cent for the District of Columbia, 0.9 per cent for California, and 0.9 per cent for Vermont. Largest decreases (6.4 to 8.5 per cent) in birth rates by state of residence occurred in Arizona, Louisiana, Nevada, and Oklahoma.

WARTIME DEATH RATES

The crude death rate in continental United States was the same in 1945 as

TABLE A

BIRTH, MARRIAGE, DIVORCE, AND DEATH RATES, AND MATERNAL AND INFANT MORTALITY RATES: UNITED STATES, 1937-1945

(Births and deaths exclusive of stillbirths)

Year	Rate per 1,000 Estimated Population			Rate per 1,000 Live Births		
	Birth	Marriage	Divorce[1]	Death	Maternal Death	Infant[2] Death
1945	[3]19.6	[4]12.3	[3]3.6	[4]10.6	2.1	38.3
1944	[3]20.2	[4]11.0	[3]2.9	[4]10.6	2.3	39.8
1943	[3]21.5	[4]11.8	[3]2.6	[4]10.9	2.5	40.4
1942	[3]20.9	[4]13.2	[3]2.4	[4]10.4	2.6	40.4
1941	[3]18.9	[4]12.7	[3]2.2	[4]10.5	3.2	45.3
1940	[3]17.9	[4]12.1	[3]2.0	[4]10.7	3.8	47.0
1939	17.3	10.7	1.9	10.6	4.0	48.0
1938	17.6	10.3	1.9	10.6	4.4	51.0
1937	17.1	11.3	1.9	11.3	4.9	54.4

[1] Includes annulments.
[2] Deaths under 1 year of age.
[3] Based on total population including armed forces overseas.
[4] Excludes armed forces overseas.

in 1944, the rate for both years being 10.6 per 1,000 estimated population exclusive of the armed forces overseas. This rate was 10.9 during 1943, when an influenza epidemic caused a rise in the crude death rate. In terms of numbers, there were 1,401,719 deaths in continental United States during 1945, as compared with 1,411,338 in 1944 and 1,459,544 in 1943.

Interpretation of the crude death rate is subject to certain limitations because it is computed from the number of deaths and population within the continental United States. The overseas population has consisted largely of men in the younger age groups. Normally, the death rate for these men is low. Their absence from the country left an older population, and even assuming no change at all in underlying mortality risk, the crude death rate for the continental population of the war years would have to be higher than the crude death rate for the population of pre-war years.

For the war period, therefore, the crude death rate is a relatively poor measure of the change in mortality risk from year to year. A better picture is given by the data of Table B, which shows the number of deaths and the death rates for certain age groups in the population. Examination of the table shows that, in 1945 as compared with 1942, the death rate for the age group 5-14 years remained the same and the rate for the group aged 15-24 years increased somewhat, probably because the more physically fit young men were selected for military duty overseas. Otherwise, each age-specific rate shows a sigificant decline from 1942 to 1945. In general, therefore, underlying mortality conditions within the United States have shown real improvement during the war despite the higher crude death rate in 1945 as compared with 1942.

During 1945, death rates by state of residence varied from 8.2 for North Carolina to 12.9 for Vermont. Increases in these rates from 1944 to 1945 were largest (3.3 to 4.5 per cent) in Colorado, Idaho, and Virginia. The greatest decreases (5.3 to 5.8 per cent) were reported from Nevada, South Carolina, and Vermont. In some part these figures may reflect real changes in mortality risk, but variations in the composition of the populations of the states by age, race, and sex have probably been more important factors.

Provisional data indicate that, during the first 10 months of 1946, the number of deaths in the United States was approximately 1.6 per cent larger than the number recorded during the first 10 months of 1945. However, most of this increase in number of

TABLE B

NUMBER OF DEATHS BY AGE, AND AGE-SPECIFIC DEATH RATES: DEATH-REGISTRATION STATES,[1] FOR SPECIFIED YEARS

(Exclusive of stillbirths. Rates per 1,000 estimated population in a specified age group)

Year	All Ages[2]	Under 1 Year	1–4 Years	5–14 Years	15–24 Years	25–44 Years	45–64 Years	65 Years and Over
				Number				
1945[3]	1,401,719	104,684	21,345	19,481	38,770	139,930	404,144	672,012
1944[3]	1,411,338	111,127	23,317	20,311	42,876	142,255	401,590	668,453
1943[3]	1,459,544	118,484	23,903	20,968	46,816	149,967	411,549	686,248
1942[3]	1,385,187	113,492	21,854	19,805	45,153	151,366	396,501	635,286
1941[3]	1,397,642	113,949	24,302	21,869	48,110	156,452	396,051	635,681
1940[3]	1,417,269	110,984	24,678	23,253	48,999	160,633	399,774	647,246
1935	1,392,752	120,138	36,807	36,690	63,296	192,968	384,207	557,346
1930	1,327,240	143,201	49,096	40,108	71,251	196,976	348,661	476,104
1925	1,191,809	158,080	54,937	40,074	67,419	180,368	286,711	402,561
1920	1,118,070	170,911	72,099	45,581	72,662	193,485	239,024	322,702
1910	696,856	135,020	54,030	25,592	41,206	113,105	140,796	186,414
1900	343,217	71,117	32,412	14,665	21,759	56,591	62,391	83,094
				Rate				
1945[3]	10.6	41.4	2.0	0.9	2.0	3.6	14.2	66.5
1944[3]	10.6	43.3	2.3	0.9	2.0	3.7	14.4	67.8
1943[3]	10.9	43.0	2.6	1.0	2.0	3.8	14.9	71.0
1942[3]	10.4	48.0	2.4	0.9	1.9	3.8	14.6	67.2
1941[3]	10.5	52.3	2.8	1.0	2.0	3.9	14.8	68.9
1940[3]	10.7	54.8	2.9	1.0	2.0	4.0	15.2	71.7
1935	10.9	60.9	4.4	1.5	2.7	5.1	16.2	71.9
1930	11.3	69.0	5.6	1.7	3.3	5.7	16.8	73.7
1925	11.7	75.4	6.4	2.0	3.8	5.9	16.6	76.5
1920	13.0	92.3	9.9	2.6	4.9	7.4	16.6	77.5
1910	14.7	131.8	14.0	2.9	4.5	7.6	18.4	80.6
1900	17.2	162.4	19.8	3.9	5.9	9.1	19.8	82.3

[1] Include entire continental United States, beginning with 1933.
[2] Include "unknown" and ages not stated.
[3] Excludes armed forces overseas.

deaths reflects the demobilization and return to continental United States of several million men, and probably does not indicate an unfavorable change in mortality risk in this country during 1946.

DEATHS BY CAUSE

During 1945, deaths from major infectious diseases declined to new lows in the United States. The year set a record low for pneumonia and influenza. Deaths from these respiratory causes totaled 68,386, which was 16.4 per cent less than the number reported for 1944, and 8.2 per cent less than the previous minimum (1942). Deaths from tuberculosis continued to decrease during 1945. The number of deaths in the United States from this cause was 52,916, or 3.3 per cent less than the number in 1944 and less than in any previous year. Meningitis, scarlet fever, whooping cough, dysentery, malaria, syphilis, measles, and poliomyelitis also declined (Table C).

Motor-vehicle accident deaths rose sharply to 28,076, increasing 15.7 per cent over the 1944 figure. Most of this increase took place in the second half of 1945 after gasoline rationing ceased. Deaths from other accidental causes totaled 67,842, which represented a decrease of 4.4 per cent from the 1944 figure.

TABLE C

DEATH RATES FOR SELECTED CAUSES: DEATH-REGISTRATION STATES:[1] FOR SPECIFIED YEARS, 1920-1945

(Exclusive of stillbirths. Rates per 100,000 estimated population. Numbers after causes of death are those of the detailed International List of Causes of Death, 1938 revision)

Cause of Death	1945[2]	1944[2]	1940[2]	1930	1920
All causes	1,062.1	1,064.7	1,074.1	1,132.1	1,298.9
Typhoid and paratyphoid fever 1, 2	0.4	0.4	1.1	4.8	7.6
Cerebrospinal (meningococcus) meningitis 6	1.3	2.1	0.5	3.6	1.6
Scarlet fever 8	0.2	0.3	0.5	1.9	4.6
Whooping cough 9	1.3	1.4	2.2	4.8	12.5
Diphtheria 10	1.2	0.9	1.1	4.9	15.3
Tuberculosis (all forms) 13–22	40.1	41.3	45.8	71.1	113.1
Tuberculosis of respiratory system, etc.* 13	37.0	38.3	42.1	63.0	99.8
Tuberculosis (other forms) 14–22	3.1	3.0	3.7	8.1	13.4
Dysentery 27	1.2	1.4	1.9	2.8	4.0
Malaria 28	0.3	0.4	1.1	2.9	3.4
Syphilis 30	10.7	11.3	14.4	15.7	[3]16.5
Measles 35	0.2	1.5	0.5	3.2	8.8
Poliomyelitis, polioencephalitis (acute) 36	0.9	1.0	0.8	1.2	0.9
Cancer and other malignant tumors 45–55	134.5	129.1	120.0	97.4	83.4
Cancer of the digestive organs and peritoneum 46	60.8	58.8	55.1	48.9	44.0
Cancer of female genital organs 48, 49	16.9	16.7	16.0	28.0	24.9
Cancer of the breast 50	13.0	12.4	11.7	9.2	7.6
Cancer (other sites) 45, 47, 51–55	43.8	41.2	37.1	25.4	[4]19.5
Acute rheumatic fever 58	1.0	1.1	1.3	2.5	3.8
Diabetes mellitus 61	26.6	26.4	26.5	19.1	16.1
Exophthalmic goiter 63b	1.9	2.0	2.8	3.4	1.8
Pellagra (except alcoholic) 69	0.7	0.8	1.6	5.2	2.5
Alcoholism (ethylism) 77	1.7	1.4	1.9	3.5	1.0
Intracranial lesions of vascular origin 83	97.9	93.7	90.8	89.0	93.0
Diseases of the heart 90–95	321.5	315.4	291.9	214.2	[5]159.6
Chronic rheumatic diseases of the heart 90a, 92b,c, 93c, 95b	18.8	19.3	20.8	—	—
Diseases of coronary arteries and angina pectoris 94	99.6	93.9	76.9	—	—
Diseases of heart (other forms) 90b, 91, 92a,d,e, 93a,b,d,e, 95a,c	203.2	202.2	194.2	—	—
Pneumonia (all forms) and influenza 107–109, 33	51.8	61.7	70.1	102.5	207.3
Bronchopneumonia 107	21.8	23.2	26.2	34.3	54.6
Lobar pneumonia 108	17.7	20.5	25.1	45.3	72.9
Pneumonia (unspecified) 109	4.6	4.9	3.5	3.5	9.3
Influenza 33	7.7	13.1	15.3	19.4	70.5
Ulcer of stomach or duodenum 117	6.8	6.6	6.8	6.2	[6]3.6
Diarrhea, enteritis, and ulceration of intestines 119, 120	8.7	9.9	10.3	26.0	[7]53.7
Appendicitis 121	5.1	5.9	9.9	15.2	13.2
Hernia and intestinal obstruction 122	8.8	9.0	9.0	10.2	10.5
Cirrhosis of the liver 124	9.5	8.7	8.6	7.2	7.1
Biliary calculi, etc.* 126, 127	5.1	5.2	6.0	7.2	—
Nephritis 130–132	66.7	69.2	81.4	91.0	88.8
Diseases of the prostate 137	5.6	5.8	6.7	10.7	8.2
Diseases of pregnancy, childbirth, and the puerperium 140–150	4.3	4.8	6.7	25.7	38.6
Puerperal septicemia 140, 142a, 145A, 147	1.5	1.7	2.9	—	—
Puerperal toxemia 141a,c, 144, 148	1.1	1.2	1.7	7.1	9.7
Hemorrhage, trauma and shock* 141b, 142b, 143, 146, 149	1.3	1.4	1.6	—	—
Other puerperal causes 141d,e,f, 145B, 150	0.4	0.4	0.5	—	—
Congenital malformations 157	12.3	12.6	10.0	11.2	15.2
Premature birth 159	24.0	25.0	24.5	31.5	43.6
Suicide 163, 164	11.2	10.0	14.3	15.6	10.2
Homicide 165–168	5.6	4.9	6.2	8.8	6.8
Accidental deaths 169–195	72.7	71.8	73.4	80.4	[8]71.0
Motor-vehicle accidents 170	21.3	18.3	26.1	26.7	[9]10.3
Other accidents 169, 171–195	51.4	53.5	47.3	53.8	[8]60.7

TABLE C (Continued)

Cause of Death		1945[2]	1944[2]	1940[2]	1930	1920
Senility, ill-defined and unknown causes	162, 199, 200	22.0	22.3	23.7	30.4	31.8
All other causes		98.3	99.5	99.9	119.2	163.4

* Refer to complete International List titles.
— Data not available.
[1] Include entire continental United States, beginning with 1933.
[2] Excludes armed forces overseas.
[3] Excludes aneurysm of the aorta.
[4] Excludes cancer of the pancreas.
[5] Excludes diseases of coronary arteries.
[6] Excludes ulcer of duodenum.
[7] Includes ulcer of duodenum.
[8] Excludes legal executions.
[9] Excludes automobile collisions with trains and streetcars, and motorcycle accidents.

The ten leading causes of death in 1945 were the same ones that headed the list in the pre-war years 1939-1941. Heart disease ranked first, accounting for 424,328 deaths or 30.3 per cent of the total 1,401,719 deaths in 1945. Cancer ranked second, claiming 177,464 deaths or 12.7 per cent. The next four causes were intracranial lesions (129,144 deaths), nephritis (88,078), pneumonia and influenza (68,386), and accidents other than motor-vehicle (67,842). The last four of the ten leading causes were tuberculosis (52,916), diabetes mellitus (35,160), premature birth (31,614), and motor-vehicle accidents (28,076). Except for motor-vehicle accidents, the rank order of these ten leading causes in 1945 was the same as in the period just preceding the war years. Owing chiefly to wartime restrictions on driving, motor-vehicle accidents dropped from eighth place in 1939-1941 to tenth place in 1942-1945.

INFANT AND MATERNAL MORTALITY

The infant mortality rate, or deaths under one year of age per 1,000 live births, was 38.3 in 1945, the lowest ever recorded for the United States. This rate represented a decline of 3.8 per cent from the corresponding rate of 39.8 in 1944. In terms of numbers. 104,684 infant deaths were registered in the United States during 1945, as compared with 11,127 in 1944.

In 1945, infant mortality rates by state of residence were lower than 30 in Connecticut, Nebraska, North Dakota and Oregon, while they were higher than 50 in Arizona, Colorado, New Mexico, and West Virginia. In general, infant and maternal mortality rates vary with the accessibility of medical and nursing care for mothers and infants, with the effectiveness of communicable disease control, and with the distribution of births by race and age of mother. Other factors influencing the infant mortality rate are incomplete registration of births and incomplete registration of infant deaths, but to some extent these factors tend to be canceled out in the rate as conventionally computed.

The maternal mortality rate was 2.1 per 1,000 live births in 1945, which represented a decrease of nearly 9 per cent from the corresponding rate of 2.3 in 1944. The 1945 figure was the lowest ever recorded for the United States. The numbers of maternal deaths (all puerperal causes) were 5,668 in 1945 and 6,369 in 1944.

A major factor contributing to the favorable trend in both infant and maternal mortality rates has been the marked increase in the proportion of infants delivered in hospitals or similar institutions. This proportion was 78.8 per cent in 1945, as compared with 75.6 per cent in 1944. Throughout the past decade this percentage has been rising steadily, from 36.9 per cent in 1935. As estimated from this trend, the proportion of births occurring in hospitals was probably close to 81.5 per cent in 1946.

TRANSFER OF VITAL STATISTICS TO THE U. S. PUBLIC HEALTH SERVICE

On July 16, 1946, in accordance with Reorganization Plan No. 2, the Congress of the United States transferred the Vital Statistics Division from Bureau of the Census to the Federal Security Agency. Within the Federal Security Agency, the Division was reconstituted and reorganized as the National Office of Vital Statistics, and placed in the Office of the Surgeon General of the United States Public Health Service.

Following the First World War, birth certificates began to be used extensively in the enforcement of regulatory laws dealing with child labor and compulsory education. From 1935, the use of the birth certificate for its legal and probative value began to increase rapidly throughout the country. This arose largely from public and governmental interest in proving the age of individuals so as to establish the rights to pensions and social security benefits.

This wholesale need for birth certificates, frequently for persons born prior to the establishment of such records in many states, led to the overloading of the bureaus of vital statistics in state after state. These organizations streamlined their offices, dropping statistical and other functions, in order to meet the public demand for birth certificates.

In 1941, wartime pressure for improvements gave rise to the introduction of various bills in the Congress aiming at either coordination or federalization of the loose-knit vital statistics system. In order to clarify the confusion, the President of the United States recommended opposition to the enactment of any legislation, pending a study by the Bureau of the Budget (House Document No. 242, 78th Congress, 1st Session—"Message from the President of the United States transmitting Report of the Bureau of the Budget on Measures Relating to Vital Records and Vital Statistics"). A Commission on Vital Records was appointed in December 1941.

The first recommendation of the Commission dealt with the possibility of a national population registration during wartime. This was not carried out. The second and third recommendations called for the creation of a single Federal agency to be charged with the problem of coordinating the existing vital records organizations of the country at national, state, and local levels into a complete system. In interpreting these recommendations, the Commission was unanimously of the opinion that the vital records structure at its local level should remain as at present in the hands of the health officers, but that there should be some Federal agency that would be charged with the responsibility of strengthening and coordinating the existing vital records organizations of the country, and that this coordinated system would have as its principal objective the serving of the various national, state, local and individual needs in the use of vital records and vital statistics.

The Commission's report gave particular stress to the need for a single locus of authority at the Federal level. With the transfer of the Vital Statistics Division from the Bureau of the Census to the United States Public Health Service and its reconstitution as the National Office of Vital Statistics, this locus of authority has been created, and the Office is developing a long-term program which should fully satisfy the needs for vital records and social statistics in the United States.

PROPOSED STATISTICAL CLASSIFICATION OF DISEASES, INJURIES, AND CAUSES OF DEATH

Uniform classification of causes of diseases and deaths is fundamental to the statistical study of illness and death. Since 1900, there has been for international use a uniform system for the classification of causes of death. This classification system, known as the International List of Causes of Death, is revised decennially by the International Conference. The preparatory work for the International Conference is done by the participating nations, and the proposed revisions are discussed and acted upon at a decennial meeting which has been held in Paris.

The United States Department of State has created a committee to conduct certain preparatory work on this subject. During 1946 this committee developed a "Proposed Statistical Classification of Diseases, Injuries and Causes of Death" and has begun pilot studies with its use in Canada, England, and the United States.

Much remains to be done in the refinement of the proposed classification, after which it will be submitted to the Interim Commission of the World Health Organization as a basis for the deliberations of the 1948 International Conference to revise the International List of Causes of Death. Since this is the first time that a combined morbidity-mortality list has been devised, the many problems that arise in classification are without precedent. Also to be considered are statistical practices and usages of medical terms in foreign countries as well as in the United States, so that the proposed List will be acceptable internationally.

MARRIAGE AND DIVORCE STATISTICS PROGRAM

A widespread and insistent demand for more complete marriage and divorce statistics has existed for many years. The principal reason for the neglect of these statistics in the past has been the lack of accessibility of marriage and divorce records owing to the absence in many states of centralized collection of such records. Lack of uniformity in state laws, a frequent disregard of the requirements for good registration, and wide diversity in the form and content of the records have contributed to the problem.

The successful development of birth and death registration areas points the way to the development of a similar mechanism for collecting national statistics for marriage and divorce. Marriage and divorce registration areas can be defined according to minimum standards of completeness and accuracy of data, and states with adequate registration systems can be admitted to the areas as soon as they are established. At present, 33 states have provisions for central registration of marriages and 23 states have provisions for obtaining abstracts of divorce decrees centrally. The marriage records are filed in the state department of health in all but one of these states, while transcripts of the divorce records are so located in all but two states.

At its annual meeting in December 1946, the Association of State and Territorial Health Officers went on record as endorsing the centralization of marriage records and certificates and official abstracts of divorce records in state health departments. The development of minimum standards for marriage and divorce registration areas analogous to those used to establish birth and death registration is now being considered by the National Office of Vital Statistics in cooperation with state registrars of vital statistics.

COOPERATION WITH AMERICAN REPUBLICS

The International Vital Statistics Cooperative Program, inaugurated in 1942 as a part of the State Department's program for cooperation with the American republics, has continued its work of assisting officials of the American republics in the study and development of their vital statistics and related statistics in the fields of public health and demography.

During 1946, new projects were instituted in Bolivia, Brazil, Cuba, and Panama, and training grants in vital statistics were extended to officials of the Dominican Republic, El Salvador, Honduras, and Nicaragua.

PUBLICATIONS

The following regular series of publications pertaining to vital statistics were issued during 1946 by the National Office of Vital Statistics: *Vital Statistics of the United States, 1944,* Part I (By place of occurrence), Part II (By place of residence); *Weekly Mortality Index; The Registrar,* a monthly release; *Monthly Vital Sta-*

tistics Bulletin; Current Mortality Analysis, a monthly release; *Marriage Licenses Issued in Cities of 100,000 Inhabitants or More,* a monthly release; Quarterly Marriage Report for States; *Vital Statistics-Special Reports, National Summaries,* Vol. 25, numbers 1-16, containing tables and analytical text on various topics in vital statistics for the United States, 1944; *Vital Statistics-Special Reports, State Summaries,* Vol. 24, numbers 1-53, containing summaries of 1944 data for the United States, each state, Territory of Hawaii, Puerto Rico, and the Virgin Islands; *Vital Statistics-Special Reports, Selected Studies,* Vol. 23, numbers 7-10, containing analytical and descriptive studies in the field of vital statistics; *Annual Summary of Motor Vehicle Accident Fatalities, 1944.*

PERIODICAL PUBLICATIONS

American Druggist
572 Madison Ave., New York City.

American Journal of Anatomy
36th Street and Woodland Ave., Philadelphia.

American Journal of Clinical Pathology
Mount Royal and Guilford Aves., Baltimore, Md.

American Journal of the Medical Sciences
600 Washington Sq., Philadelphia.

American Journal of Nursing
1790 Broadway, New York City.

American Journal of Obstetrics and Gynecology
3523 Pine Boulevard, St. Louis, Mo.

American Journal of Pathology
East University Ave., Ann Arbor, Mich.

American Journal of Pharmacy
Philadelphia College of Pharmacy and Science, Philadelphia.

American Journal of Public Health and the Nation's Health
1790 Broadway, New York City.

American Journal of Surgery
49 West 45th Street, New York City.

Anatomical Record
36th Street and Woodland Ave., Philadelphia.

Annals of Surgery
227 S. Sixth Street, Philadelphia.

Journal of the American College of Dentists
350 Post St., San Francisco, Calif.

Journal of the American Dental Association
222 East Superior Street, Chicago.

Journal of the American Institute of Homeopathy
1601 Chestnut St., Philadelphia, Pa.

Journal of the American Medical Association
535 N. Dearborn Street, Chicago.

Journal of the American Pharmaceutical Association
2215 Constitution Ave., Washington, D. C.

Journal of Bacteriology
Mount Royal and Guilford Aves., Baltimore, Md.

Journal of Bone and Joint Surgery
8 The Fenway, Boston.

Journal of Clinical Investigation
300 Longwood Ave., Boston.

Journal of Dental Research
1121 Michigan St., Indianapolis.

Journal of Experimental Medicine
York Ave. and 66th Street, New York City.

Journal of Infectious Diseases
5750 Ellis Ave., Chicago.

Journal of Nervous and Mental Disease
64 West 56th Street, New York City.

Journal of Pharmacology and Experimental Therapeutics
Mount Royal and Guilford Aves., Baltimore, Md.

Journal of Social Hygiene
1790 Broadway, New York City.

Medical Life
4 St. Luke's Place, New York City.

Medical Record
215 Fourth Ave., New York City.

Medical Review of Reviews
4 St. Luke's Place, New York City.

Medicine
Mount Royal and Guilford Aves., Baltimore Md.

N. Y. State Journal of Medicine
292 Madison Ave., New York City.

Radiology
607 Medical Arts Building, Syracuse, N. Y.

Surgery, Gynecology and Obstetrics
54 East Erie Street, Chicago.

Yale Journal of Biology and Medicine
333 Cedar St., New Haven, Conn.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

Academy of Medicine, 2 E. 103rd St., New York City.

American College of Surgeons, Johns Hopkins Hospital, Baltimore, Md.

American Gynecological Society, 842 Park Ave., New York City.

American Heart Assn., Inc., 1790 Broadway, New York City.

American Institute of Homeopathy, 1601 Chestnut Street, Philadelphia, Pa.

American Laryngological, Rhinological and Otological Society, Inc., 277 Alexander St., Rochester, N. Y.

American Medical Assn., 535 N. Dearborn St., Chicago, Ill.

American Public Health Association, 1790 Broadway, New York City.

American Ophthalmological Society, 303 Whitney Ave., New Haven, Conn.

American Osteopathic Assn., 139 N. Clark St., Chicago, Ill.

American Physiological Society, 19 W. Chase St., Baltimore.

American Society of Clinical Pathologists, 531 N. Main St., South Bend, Ind.

American Society for the Control of Cancer, Inc., 350 Madison Ave., New York City.

American Society of Tropical Medicine, Ohio State University College of Medicine, Columbus, Ohio.

American Veterinary Medical Assn., 600 S. Michigan Ave., Chicago, Ill.

Association of American Medical Colleges, 5 S. Wabash Ave., Chicago, Ill.

Association of Military Surgeons of the U. S., Army Medical Museum, Washington, D. C.

Association of Schools of Public Health, Johns Hopkins University, School of Public Health, Baltimore, Md.

Commonwealth Fund, 41 E. 57th St., New York City.

Edward L. Trudeau Foundation for Research and Teaching in Tuberculosis, Saranac Lake, N. Y.

John and Mary R. Markle Foundation, 14 Wall St., New York City.

Josiah Macy, Jr. Foundation, 565 Park Ave., New York City.

National Institute of Health, Bethesda, Md.

National League of Nursing Education, 1790 Broadway, New York City.

National Tuberculosis Assn., 1790 Broadway, New York City.

New York Academy of Sciences, 79th St., and Central Park West, New York City.

New York Health Department, Inc., 125 Worth St., New York City.

Osteopathic Assisting Service Bureau, 60 East 42nd St., New York City.

Public Health Relations Committee of New York Academy of Medicine, 2 E. 103rd St., New York City.

Rockefeller Foundation, 49 W. 49th St., New York City.

Society of American Bacteriologists, 1335 H. Street N.W. Washington, D. C.

Society of Medical Jurisprudence, New York Academy of Medicine, New York City.

Southern Medical Assn., 1020 Empire Bldg., Birmingham, Ala.

United Hospital Fund, 370 Lexington Ave., New York City.

W. K. Kellogg Foundation, Battle Creek, Mich.

DIVISION XXIV

PSYCHOLOGY, PHILOSOPHY, ANTHROPOLOGY

PSYCHOLOGY

By Wilbur S. Hulin
Professor, Pacific University

GENERAL

Mind and Mechanism.—E. G. Boring asks whether or not "robotism" is profitable in psychology; he accepts this type of hypothetical thinking until sufficient data in psychophysiology are obtainable for the complete description of mental processes as neural acts (*Amer. J. Psych.*, April 1946). Considering "our knowledge of other minds," J. Weinberg points out that our multiple accessibility to material objects has greater validity than has our limited inference of the existence of other minds (*Philos. Rev.*, Sept.). W. C. H. Prentice revives the discussion of operationism in psychology, declaring that experimental techniques give objectivity to hypotheses and thus permit a disregard of the "operationist kibitzer" who insists upon complete definitions of concepts (*Psych. Rev.*, July).

Presidential Address.—E. R. Guthrie, in his presidential address before the American Psychological Association, expressed the hope that the increasing number of young psychologists will not become mere technicians, but will realize that an accumulation of facts without an adequate background of theory is unstable (*Psych. Bull.*, Jan.).

Textbooks.—A widely adopted new textbook is found in the generously illustrated volume by N. L. Munn, called *Psychology* (Houghton Mifflin). W. Wolff's book, *What is Psychology,* aims at reaching the depth of personality (Drexler). J. S. Gray's *Psychology in Human Affairs* (McGraw-Hill) refers to such applications as vocational guidance, school and college life, drugs, and speech correction. B. V. Cunningham offers a *Psychology for Nurses* (Appleton-Century). *Twentieth Century Psychology,* edited by P. L. Harriman, contains a collection of special articles on the major topics of psychology (Philos. Lib.).

Post-war.—Troops on occupation duty in the conquered enemy countries suffered a decline in morale when combat duties ceased and occupation duties began with insufficient instruction regarding the political significance of their work (*Amer. J. Psychiat.*, May). À propos of the war criminal trials, D. R. Taft urges that, since all criminals reflect both their own social experiences as well as their cultures, we should think less of punishing the criminals and think more of reducing international tensions (*Amer. Sociol. Rev.*, Aug.). The post-war training of clinical psychologists is following the medical internship program rather than the academic Ph.D. program (*J. Consult. Psych.*, July).

PERSONALITY

Guidance.—*People in Quandaries* (Harper), by W. Johnson, deals with the "semantics" of personal adjustment; the author strives to prevent the practice of "reckless adviseering" of the popular sort.

Types.—C. C. Seltzer found a greater frequency of personal stability and sensitivity and less amount of ability for social adjustment and integration in young men who possess such bodily disproportions as excessive height and thinness, wider hips than shoulders, and broad faces and narrow chests (*Psychosomat. Med.*, Apr.). J. A. Boynton says that prejudice shows up among individuals whose personalities are restricted in the growth of natural impulses and lacking in harmonious relationships with close associates (*J. Psych.*, July). H. Gray and J. B. Wheelwright believe that Jung's "psychological types" still represent a useful classification; these authors have devised a questionnaire for the speedy analysis of a type; they find that the "introvert-sensation-thinking" type is the most common (30 per cent) and the "extravert-intuitive-thinking" type least frequent (5 per cent) (*J. Gen. Psych.*, Jan.). A. Roe, in a study of the personality of artists, indicates a need for vocational adjustment of personality characteristics for particular vocations (*Educ. & Psychol. Meas.*, Winter).

Tests.—A projective test of personality, by A. R. Rhode, consists of sentence completions which reveal objective needs, emotional conflicts, and longings (*J. Appl. Psych.*, Apr.). Electroshocks evoke characteristic personality traits such as infantile regressions; the shocks, according to E. P. Mosse, release repressed emotions or libido (*J. Nerv. & Ment. Dis.*, Sept.). H. Grant has designed a rapid personality evaluation, based on the *Minnesota Multiphasic Personality Inventory,* consisting of ten statements for each of the following scales: validity, lie, depression, hysteria, psychopathic deviate, masculinity-femininity, paranoid, psychasthenia, schizoid, and hypochondriasis (*Amer J. Psychiat.*, July).

ABNORMAL

Principles.—F. Alexander *et al* collaborate in a summary of present-day *Psychoanalytic Therapy* (Ronald). J. H. Masserman presents the second in a series of books on *Principles of Dynamic Psychiatry* (Saunders); the present volume develops the corollaries to the author's four criteria of motivation, experimental adaptation, deviation and substitution, and conflict. S. Z. Orgel describes *Psychiatry, Today and Tomorrow* (*Internat. Univ.*). J. L. Moreno explains *Group Psychotherapy* (Beacon).

Treatment.—*Shock Treatment and Other Somatic Procedures in Psychiatry* (Grune & Stratton), by L. B. Kalinowski and P. H. Hoch, evaluates the results of physical therapies and lobotomies in treating the insane. D. H. Yates cites both case studies and experimental findings from the literature on conditioned responses to support the value of Jacobson's method of relaxation for psychotherapeutic purposes (*J. Genet. Psych.*, Apr.).

Feeblemindedness.—L. A. Lurie proposes that the medical concept of feeblemindedness ought to be that of "a symptom underlying constitutional disturbances which may be remediable" rather than that it be regarded as a clinical entity with an overemphasis on social adequacy (*Amer. J. Ment. Deficiency,* April). Among recent advances in the application of medicine to mental deficiency is the emphasis upon proper nutrition during pregnancy; for example, much of the commercialized emphasis upon vitamins is confirmed by medical research; another example is the prevention of post-infectional deficiencies by the use of sulpha drugs and penicillin: W. G. Murray (*ibid.*, Jan.). From an analysis of 100 cases of epilepsy, O. Marburg and M. Helford conclude that this affliction is caused by head injuries oftener than has been supposed; the authors claim that this factor is more important than heredity (*J. Nerv. & Ment. Dis.*, Nov.).

Adjustment.—P. M. Symonds discusses in *The Dynamics of Human Adjustment* (Appleton-Century) the problems of drive, frustration, anxiety, defense, fantasy, love, the meaning of normality, and the techniques of dynamic treatment. K. Dunlap in *Personal Adjustment* (McGraw-Hill) describes the present-day methods of eliminating maladjustments.

Institutional Practices.—In an editorial in *Mental Hygiene* (July), the recent popular attacks on the conditions in mental hospitals are supported and the need for improvements is confirmed, but it is pointed out that the principal defect is in the general system of institutionalized care which ignores the causes and the beginnings of mental illness in the community. L. S. Kubie shows a way to break the bottleneck in the rehabilitation of war cases of mental illness; the need is for training more psychiatrists; the permanent illness of one veteran costs the taxpayer $40,000 whereas the training of one psychiatrist costs $25,000 (*Amer. J. Orthopsychiat.*, July). R. A. Clark and A. H. Baldinger describe a seminar for theology students, including a study of psychiatry, mental hygiene, and social phenomena, such as cultisms (*Ment. Hyg.*, Jan.). L. W. Fitzsimmons offers a simple *Textbook for Psychiatric Attendants* (Macmillan) to promote better morale and understanding.

SOCIAL

Public Opinion.—H. C. Link has drawn a summary of the Psychological Corporation's Index of Public Opinion on such subjects as the possibility of another war (*J. Appl. Psych.*, Aug.). B. L. Smith *et al* have prepared a comprehensive reference guide on *Propaganda, Communication, and Public Opinion* (Princeton Univ.). An extended discussion, including criticisms and rebuttals on the subject of "opinion-attitude measurement" by Q. McNemar and others, is to be found in the July and November issues of the *Psychological Bulletin*. R. N. McMurray has verified a surmise that employee opinion polls are favorably received by union members wherever the workers have confidence in the company (*J. Appl. Psych.*, June).

Attitudes.—G. W. Allport and B. M. Kramer point to some roots of social prejudice which include: lack of awareness of one's own prejudices, unpleasant childhood experiences and instruction, neurotic fears and suspicions, and non-scientific fields of interest (*J. Psych.*, July). Persons with a favorable attitude toward Russia have a significantly greater desire for freedom and new experience, according to G. H. Smith (*ibid.*, Jan.). Attitudinal changes during military service were measured by a questionnaire in which the subject responded with "more" or "less" or "no change" to such questions as, "Do you have more and wider interests now than you used to, or are your interests less wide?" H. M. Hildreth (*Educ. & Psych. Meas.*, Autumn). G. H. Seward's *Sex and the Social Order* (McGraw-Hill) deals with the social attitudes and adjustments of the sexes in war and peace.

Race.—Up to the present time there continues in industry to be a racial intolerance in the informal social groups working on the same job; and the only way that management can give security to members of rejected races is to give them an opportunity for individual effort (*Amer. Sociol. Rev.*, Oct.). F. H. Lund and W. C. Berg demonstrate that, in American-born children, it is possible on the basis of physical appearance alone to identify the national family origin to a better than chance degree; speech is less distinctive (*J. Soc. Psych.*, Oct.).

Religion.—In a symposium upon the contributions of psychology to religious education, E. M. Ligon stresses the aspects of character education which have received psychological study; precautions in the cultivation of feelings of guilt have been recommended; careful measuring instruments of attitude and belief have been constructed; respect for the basic fact of individual differences has been urged; the dynamics of motivation has been brought out (*Relig. Educ.*, Oct.). K. Dunlap depicts religion as a product of man's mental processes; the genetic development is stressed in his book, *Religion:*

Its Functions in Human Life (McGraw-Hill).

Industrial.—N. R. F. Maier's *Psychology in Industry* (Houghton Mifflin) surveys the most recent tests, personnel techniques, and safety devices, based on the human element in industry. E. G. and C. W. Flemming explain how the selection of salesmen by psychological tests can be improved if the combined scores of tests by Bernreuter, Moss, Washburne, Otis, Caufield, and Strong be used; these correlate plus 80.6 with the records of 348 salesmen (*J. Psych.*, Jan.).

Education.—J. I. Mursell's *Successful Teaching—Its Psychological Principles* (McGraw-Hill) emphasizes the importance of socialization in the classroom. In a study by S. L. Pressey it is seen that younger college graduates are more successful in life than are those who graduate at an older age (*J. Appl. Psych.*, June).

CHILD PSYCHOLOGY

Development.—L. P. Thorpe reviews the experimental studies of children in his book, *Child Psychology and Development* (Ronald). The faculty of the University School at the Ohio State University have prepared a collaborated study entitled *How Children Develop* (Ohio State Univ.). B. L. Beverly's *A Psychology of Growth* (McGraw-Hill), especially designed for use by nurses, outlines the human growth processes. L. Carmichael is the editor of a *Manual of Child Psychology* (Wiley). A new summary of human genetics and eugenics has been compiled by R. Cook and B. S. Burks: *How Heredity Builds Our Lives* (Amer. Genet. Assoc.).

Group Study.—M. C. Erickson finds systematic class differences in the training of children of different social status; for example, children of middle class families are taught to assume responsibility early and consequently encounter more frustrations than do children of lower class families (*Amer. J. Sociol.*, Nov.). Observations on *The Adolescent in Social Groups* (Stanford Univ.) have been gathered by F. B. Newman.

Therapy.—A new periodical, *The Journal of Child Psychiatry*, edited by E. Harms, C. M. Louttit, L. Kanner, and others, appeared in 1946. A psychiatrist's consideration of behavior problems in children should include the following six syndromes: the defiant child, the overinhibited child, the unsocialized, aggressive child, the socialized delinquent, the brain-injured child, and the schizoid child; consistent clusters of symptoms have been found at the Chicago Institute for Juvenile Research for these traits (*Amer. J. Orthopsychiat.*, Apr.). E. F. Robinson gives a detailed description of the play of children with dolls, and presents a careful diagnosis of the significance of the emotional aspects of their play, especially the aggressive aspects, which were more strongly and selectively exhibited toward groups of dolls which represented the child's actual family than toward standard sets of dolls (*Child Dev.* Sept.). According to L. W. Sontag, some of the significant psychosomatic aspects of the child's activities include: rapid growth causes continual modification of homeostasis; prenatal excessive fatigue of mother and also continuous excessive noise; "blood borne" anxieties; children 18 months old develop diarrhea, e.g., when mother is worried about her husband's participation in battle; so-called attention-getting devices of the child related to situations in which the parent exhibits undue concern (*The Nerv. Child*, Oct.).

PHYSIOLOGICAL

Drugs.—H. L. Freedman and M. J. Rockmore found that the use of marihuana produced marked difficulties in the emotional adjustment of 55 per cent of the addicts of this drug (*J. Clin. Psychopath.*, Apr.). A. R. Lindesmith disputes the claim that chimpanzees can become morphine addicts; the behavior of the animals who regularly receive the drug is similar to that of humans who are not addicts; true addiction requires a degree of intellectual development—perception and learning—possible only in man (*J. Comp. Psych.*, Apr.).

Electroencephalography. — E. H. Hsü has compiled a series of quantitative norms of the EEG of five significant syndromes: "slow activity," "epileptic," "psychomotor," "hyperventilation," and "fast activity," and pleads for a reference to such norms in the diagnosis of clinical findings (*J. Psych.*, Oct.). Emotions produce an electroencephalographic change characterized by spontaneous low voltage random high frequency patterns in the frontal lobes: R. Cohn (*J. Nerv. & Ment. Dis.*, Oct.).

Brain.—The post-rotational nystagmus in pigeons becomes impaired when the striate bodies of the brain are injured; apparently a continual neural flow, constituting a homeostasis, is interrupted: G. K. Yacorzynski (*Comp. Psych. Monog.*, Aug.). Sleep, as examined in rats, has been shown by W. J. H. Nauta, to be regulated by the hypothalamis: a preoptic region (a "sleep center") exerts an inhibitory influence over a caudal ("wake center") area of the hypothalamus (*J. Neurophysiol.*, July). D. H. Raab and H. W. Ades were able to establish auditory conditioned responses in cats with only the midbrain, and also with only the bulbar level intact (*Amer. J. Psych.*, Jan.).

Motor Patterns.—H. T. Griedanus describes some manifestations of sudden shift in action, especially observed in birds, from fighting to strutting, or preening, which are called "sparking-over actions," occurring presumably when the animal is faced with a conflict between incompatible impulses (*J. Comp. Psych.*, June). The "smile" has been traced ontogenetically by R. A. Spitz and K. M. Wolf who find that this facial expression appears or does not appear according to the normalcy of emotional relationships with the mother; the smile is a criterion of the normal inception of the infant's social relations (*Genet. Psych. Monog.*, Aug.). Blind persons are aided in their vocational adjustment by tests of motor skill: the blind make a better average score than do the seeing on motor tests; motivation is harder to establish in the blind because of the protected world in which they live; speed is relatively insignificant; emotional adjustment tests are needed in connection with the other vocational tests: M. K. Bauman (*J. Appl. Psych.*, April).

LEARNING

Conditions.—H. L. Kingsley's book on *The Nature and Conditions of Learning* (Prentice-Hall) gives particular emphasis to educational psychology; seven forms of learning are presented along with a course of suggested improvements in methods of learning. H. S. Tuttle calls attention to the growing volume of discussion of "two kinds of learning" which are to be treated as independent of each other: namely, "affective learning" and "cognitive learning"; the former is needed for social control (*J. Psych.*, Oct.). H. Woodrow says that the ability to learn depends on the specificity of the actions practiced (rather than upon general transferred effects) (*Psych. Rev.*, May). T. G. Alper distinguishes ego-involved behavior from task-involved behavior in the process of learning; he finds experimentally that the task-involved behavior is superior (*Amer. J. Psych.*, April). T. S. Krawiec demonstrated that the visual method of learning either nonsense syllables or nouns is superior to the auditory method of learning comparable material (*J. Gen. Psych.*, April).

Motivation.—Learning in rats is strongly influenced by the strength of the motivation, such as is procured by 12-, 24-, and 48-hour time intervals of hunger; M. M. Macduff found that, even though fewer trials are needed for learning a maze by the hungriest rats, still retention persists for a longer time afterward (*J. Comp. Psych.*, Aug.).

Conditioned Response.—K. S. Lashley and M. Wade deny the validity of Pavlov's theory that the generalization of conditioned responses is based upon some type of undetermined interaction of sensory nervous pathways (*Psych. Rev.*, March). The conditioning of vasomotor responses in humans is shown by L. A. Gottschalk to take place more readily in subjects who exhibit symptoms of autonomic nervous system imbalance; the subjects could not accurately introspect upon vascular changes which can be objectively recorded (*Psychosom. Med.*, Feb.).

ANIMAL PSYCHOLOGY

Adaptation Patterns. — Cockroaches relearn a maze better after periods of inactivity or rest than after intervening periods of enforced work, thus confirming the hypothesis that inhibition by intervening experience is the cause of forgetting: H. Minami and K. M. Dallenbach (*Amer. J. Psych.*, Jan.). H. C. Sharp *et al.* found that the electric shocks impair the performance of rats in a "reasoning" test consisting of generalized abstractions of maze patterns (*J. Psych.*, Oct.). A. O. England reports that timidity, as revealed in rats by purposive avoidance of electric shocks is more conspicuous in castrated rats and still more conspicuous in vitamin-B deficient animals than in normal rats (*J. Comp. Psych.*, Oct.). *Cats in a Puzzle Box* (Rinehart) is a monograph illustrated with motion picture stills of the ability of cats to solve problems of escaping from a variety of cages: E. R. Guthrie and G. P. Horton.

SENSATION

Vision.—Yet another theory of color vision is expounded by T. L Jahn who says that modern evidence indicates that the mechanism of vision involves Granit's wide-range "dominator" nerves and narrow range "modulator" nerves in various combinations of function, and will account for S. Hecht's data if these data be interpreted in terms of conscious color experience (*J. Opt. Soc. Amer.*, Oct.). J. Cohen, re-examining the process of color adaptation to prolonged visual stimulation, concludes that there is "a gradual but never complete loss of saturation, no change in hue, but an increase in intensity" (*Amer. J. Psych.*, Jan.). H. Foster, in comparing tests of color vision, finds that the Ishihara and Pseudo-Isochromatic plates are in close agreement with each other, while the Jensen test shows far less agreement with either of the other tests (*J. Appl. Psych.*, April).

Hearing.—M. Reymert and M. Rotman conclude that auditory acuity reaches its maximum between the ages of 13 to 15 years; visual acuity is best at 16 years (*J. Genet. Psych.*, June). Auditory sensitivity depends incidentally upon muscular tension, inter-sensory (especially visual) stimulation, and fatigue: L. D. Goodfellow (*J. Gen. Psych.*, July). Tonal memory is of high significance for musical ability, according to E. G. Bugg and L. Herpel (*ibid*). M. Rosenzweig reports that cats do not distinguish tones as well as do humans; after destruction of the so-called auditory cortex, the cats continue to exhibit auditory discrimination responses as well as before destruction (*Amer. J. Psych.*, Jan.).

Touch.—G. H. Bishop brings an up-to-date review of studies of the cutaneous senses and concludes that the concept of four distinct modalities is unjustified either in terms of conscious report, sense-organ structure, brain projection areas, or specificity of afferent impulses; the manner in which responses are aroused and adaptation occurs should be a significant basis of analysis; all parts of the sensory pathway have a useful function to perform (*Physiol. Rev.*, Jan. 1946). H. K. Beecher reports that of various battle wounds, 37 per cent caused no pain, 30 per cent slight pain, 16 per cent moderate pain, and 17 per cent bad pain; of abdominal injuries, 14 per cent caused no pain, 18 per cent slight pain, 28 per cent moderate pain, and 48 per cent bad pain (*Bull. U. S. A. Med. Dept.*, May). E. Herz *et al.* report that a successful objective method of testing anaesthetic areas of the skin, owing to peripheral nerve injury, is that of mapping the electrical skin resistance; the unreliability of the introspections given by patients is thus eliminated (*Arch. Neurol. & Psychiat.*, Oct.).

Taste and Smell.—C. A. Moore and R. Elliott explored the taste receptors of birds and found a few taste buds on the tongues of some birds and none in other birds; the inference is that the tongue is not significant for the sense of taste in the earlier stages of evolution (*J. Comp. Psych.*, Apr.). T. C. Ruch and H. D. Patton locate the projection area for the sense of taste in the opercular region of the cortex (*Fed. Proc. Amer. Soc. Exper. Biol.*, Jan. 1946). In a factorial analysis of olfaction E. H. Hsü found a distinctive plant factor and an animal factor in addition to a hydrogen factor and a nitrogen factor (*Psychomet.*, Feb.).

Perception.—Reviewing studies in time perception, A. R. Gilliland *et al.* conclude that time estimation is not given as directly as is space perception, but the time sense is readily developed by training (*Psych. Bull.*, March). Young children develop a sense of time first with a concept of "now" at 18 months; "in a minute" at 21 months; "pretty soon" at 24 months; "morning" and "afternoon" at 30 months; "all the time" and "for two weeks" at 36 months; "month," "next summer" at 48 months; and the days of the week and age at next birthday at 60 months: L. B. Ames (*J. Genet. Psych.*, March). In perceiving incomplete pictures, young men and young women react more quickly and accurately than older men and older women; in general, men reacted more quickly than women; an excellent new set of 10 incomplete pictures was introduced by E. Verville and N. Cameron (*ibid.*, June).

HIGHER MENTAL PROCESSES

Reasoning.—M. Wertheimer's *Productive Thinking* (Harper) employs the principle of "insight" as used by the Gestalt psychology school. Problem solving by two-year-old children reveals the distinct functioning of substitutional reactions, negative responses, primitive reaching (toward goals), trial-and-error, and immediate (insight) solutions; individual differences in personality already play a large part in the ability to solve such problems as the devising of "tools" to be used in obtaining desirable objects placed out of reach: B. Ling (*J. Genet. Psych.*, March).

Symbols.—C. Morris integrates the aspects of communication and meaning in *Signs, Language and Behavior* (Prentice-Hall). H. Helson and H. B. Helson suggest that abstract thought consists of symbols structured into various designs out of which concrete thoughts may emerge in a manner similar to that in which graphic figures or designs appear within a complex geometric design viewed from various angles (*Amer. J. Psych.*, July).

Intelligence.—H. H. Goddard, nearly 40 years after introducing the Binet Intelligence Test to America, now defines intelligence as "availability" of effective responses and "anticipation" of immanent problems (*J. Soc. Psych.*, Aug.). D. O. Hebb and K. Williams have designed a new method of rating animal intelligence: an enclosed field-elevated maze is used as the basis for making comparisons between various animals (*J. Gen. Psych.*, Jan.). H. Guetzkow and J. Brozek find that deprivation of B-Complex vitamins cause almost no deterioration in higher intellectual functions or in the rate of learning (*Amer. J. Psych.*, July).

AFFECTION

Emotion.—Anxiety, caused by heart trouble, is largely owing to a general overactivity of the autonomic nervous system, writes L. Hess (*J. Nerv. & Ment. Dis.*, Nov.). A. Lefford reports that, in thinking out logical syllogisms which are concerned with controversial matters, the arousal of feeling responses is likely; for example, a controversial syllogism, such as "All Communists believe in trade unions; therefore, all trade unionists are Communists," is not as accurately solved as a neutral proposition, such as, "All whales live in water; and all fish live in water too;

therefore, all fish must be whales" (*J. Gen. Psych.*, April). D. O. Herb portrays the nature of fear as consisting of spontaneous (unlearned) reactions when the physiological cerebral processes are disrupted (*Psych. Rev.*, Sept.). O. H. Mowrer and R. R. Lamoreaux assert that fear is distinct from the process of avoidance reactions in animal subjects; fear itself is the result of learning, and can not therefore be regarded as a basis for explaining further learning (*J. Comp. Psych.*, Feb.). J. L. Despert and H. O. Pierce claim that increases in I. Q. of 10 to 31 points were developed in children who were successfully relieved of neurotic ailments (*Genet. Psych. Monog.*, Aug.).

Aesthetics.—The relation of aesthetic appeal to efficiency in work is dealt with in the book, *Music and Sound Systems in Industry* (McGraw-Hill) by B. E. Benson. L. Zucker treats "speech-melody" as an affective aspect of language: much of the unhappiness of transplanted races is owing to the "funny" sound of their efforts to speak the local language of their new environment (*J. Soc. Psych.*, Feb.). In an extensive bibliographical research upon the use of color in literature, S. Skard discloses the existence of highly divergent concepts of color, both between national groups and between periods of artistic style (*Proc. Amer. Philos. Soc.*, July).

PHILOSOPHY

By Ledger Wood

Associate Professor, Princeton University

GENERAL

The year 1946 was characterized by a considerable expansion of philosophical activity both in volume of literary production and in the number of conferences and meetings. The literature of the year covered a wide variety and range of topics both on the application of philosophical techniques to problems of culture, history and education, and in the purely technical disciplines of metaphysics and the theory of knowledge.

PHILOSOPHY AND CULTURAL SYNTHESIS

The recognition that war is, at least in part, the expression of ideological conflict between diverse cultures, has imposed upon philosophers the urgent obligation of analyzing the philosophical issues underlying cultural conflict and of seeking to effect a cultural synthesis at the philosophical level.

The most ambitious and responsible effort at cultural synthesis to emerge since the war is Prof. F. S. C. Northrup's *The Meeting of East and West: An Inquiry Concerning World Understanding* (Macmillan). "The time has come," warns Professor Northrup in his preface, "when these ideological conflicts must be faced and if possible resolved" (ix) and, he adds: "Because the basic problem turns out to be philosophical in character, its solution provides a philosophy of culture." The author does not claim that philosophical and ideological conflict is the sole source of cultural antagonism but states: "It is maintained, however . . . that these ideological factors are very important in the total situation —much more important than most people suppose, and that any approach to the issues of war and peace which neglects them does not face the full complexity of the difficulties confronting our world, and to that extent is doomed to failure . . ." (p. 13).

The democratic conception of a society of free and autonomous individuals is traced to its philosophical source in the Newtonian world-scheme and the Lockean philosophy. "In the modern Newtonian and Lockean theory the conception of those two factors is clear. Nature is a set of material substances located in infinitely extended Euclidean space. A person is a single atomic mental substance . . . consequently, the individual person is absolutely free and independent" (p. 93). In sharp contrast to the individualism of the democratic tradition is German political authoritarianism which reflects the Absolute idealism of post-Kantian philosophy in Germany. "To understand the Germans of our time is to realize that their culture was built predominantly on Fichte and Hegel, as Anglo-American culture has rested on Locke, Hume and Aristotle" (p. 214). The philosophical affiliations of communism are, of course, with the German rather than the English philosophers. "The primary thing to remember here is that the Marxian attitude is precisely that of the post-Kantian Hegelians. . . . With Hegel and Marx modern society passed on to a higher synthesis in which democratic societies grounded in the philosophy of Locke and Hume are definitely outmoded" (p. 239). Northrup doubtless overstates his ideological theory of culture when he asserts that "Russia is what it is today not because there is any necessity that it be that way, but largely because, for the reasons indicated, the leaders of the Russian revolution took the speculative philosophical theory of Marx, and by persuasive and forceful means brought others to its acceptance, and built political action and cultural institutions in terms of it" (p. 246. This entire sentence is in italics).

Professor Northrup's philosophical resolution of the cultural conflicts of our time obviously can not be adequately summarized, and it will perhaps be wisest to reproduce the exact words of Northrup's final solution, while referring the reader to Chapter XII for the elucidation of its meaning: "The answer to the basic problem underlying the ideological issues of these times is, therefore, as follows: *the aesthetic, intuitive, purely empirically given component in man and nature is related to the theoretically designated and indirectly verified* component, not as traditional modern Western science and philosophy suppose, by a three-termed relation of appearance, but instead *by the two-termed relation of epistemic correlation*" (p. 443, author's italics).

Another recent application of philosophy to the problem of cultural conflict is found in *"Plato's Theory of Man: An Introduction to the Realistic Philosophy of Culture* by John Wild (Harvard Univ. Press). The agreement between the two books is confined to the initial belief in the centrality of philosophy in the resolution of the cultural conflicts of the present age. Professor Wild seeks to accomplish two distinct, but for him, closely related tasks: the first, an examination of the Platonic conception of human nature and human culture, and the second the diagnosis of the crisis of modern culture. The philosophical context of the Platonic theory of man was an ontological hierarchy culminating in God. Present-day democracy is confronted with cultural crises in which it must choose between control by rational authority (the Platonic ideal) and control by irrational tyranny (the Nazi ideal). If, as Professor Wild claims, modern man is confronted with the choice between these two forms of authoritarianism—albeit one of them is rational—the future of democracy is gloomy indeed.

The interplay between philosophy and culture, so strikingly, though tragically, exemplified in the Nazis' propagandistic exploitation of Rosenberg's philosophy of Nordic culture is the subject of Prof. Albert R. Chandler's *Rosenberg's Nazi Myth* (Cornell Univ. Press). Alfred Rosenberg's *Der Mythus des 20 Jahrhunderts* (Munich, 1930) untranslated into English, exerted an influence on the Nazi mind second only to Hitler's *Mein Kampf*. The term "Mythus" of the title was not used by Rosenberg to suggest that the doctrines of Nordic superiority are false but useful political fictions. A "myth" is an intuitive truth superior to common sense and science. Professor Chandler describes Rosenberg's works as "eloquent partisan propaganda, dressed up in voluminous but uncritical erudition" (p. 6); he devotes most of his attention to the propagandistic features of the work, because as a philosophical production he finds it undeserving of serious consideration.

PHILOSOPHY AND THE PROBLEMS OF PEACE

Prof. Glenn R. Morrow, in opening the symposium on "The Distinctive Contribution of Philosophy to the Issues of the Peace" at the annual meeting of the Eastern Division of the American Philosophical Association, asked the question: What can philosophy contribute to the stabilization and maintenance of peace in the world? In his own reply to the problem he defined the task of philosophy as the creation of a "climate of mutual understanding by clarifying and universalizing our ends, by loosening the hold of national prejudices, by broadening the range of our sympathies and imaginations, and by centering our attention upon the purposes in which we are united, rather than on the traditions and dogmas that divide us" (*Journal of Philosophy,* Vol. XLIII, pp. 72-3). More specifically, he stated that the issues between Russia and the Atlantic nations are "less material than psychological and ideological." The ideological differences are not insurmountable, since there is basic ideological agreement between "communism" and "democracy" in their belief in the extension of the opportunities of education and enlightenment to all members of society and the conviction that science and technology should be applied to "the enrichment of the life of the common man."

Prof. R. B. Perry enumerated among the philosopher's possible contributions to world peace an attitude of mind which promotes disinterestedness and magnanimity; the creation of ideas and ideologies which may be causally effective in fostering peace; a critical attitude which destroys the effectiveness of "bad" propaganda; and a moral consciousness which should help to achieve the aims of peace.

THE PHILOSOPHY OF EDUCATION

The revision of the curricula in the institutions of higher learning throughout the country has stimulated philosophers to scrutinize the philosophical issues underlying the conflicting educational schemes. Unquestionably certain features of the new programs of higher education are traditionalist and stem philosophically from Scholasticism, but more liberal and progressive tendencies in education which find the philosophical basis of educational theory in pragmatism and experimentalism, have not been without their strong advocates. The lines of battle between the traditionalists and the experimentalists have been sharply drawn and the conflict is carried on with ever increasing vigor.

Sidney Hook, in his recent book, *Education for Modern Man* (Dial Press), plausibly argues that a sound philosophy of education is indispensable in the reform of our higher educational system. He clearly defines the issues between the traditionalist and the experimentalist theories and makes out a strong case for the conception of education advanced in Dewey's *Democracy and Education.*

Under the challenging title, *The Authoritarian Attempt to Capture Education* (New York, King's Crown Press, 1945), John Dewey, Arthur E. Murphy, Irwin Edman, Bruce Bliven, and 28 other participants in the Second Conference on the Scientific Spirit and Democratic Faith, present vigorous arguments for liberalism against the new traditionalism.

The more liberal and experimentalist philosophy of education is also well represented in "A Symposium on Educational Philosophy," published in *Philosophy and Phenomenological Research* (Vol. VII, 2, pp. 187-293) which consists of the following papers: "Philosophical Aspects of the Recent Harvard Report on Education," by Raphael Demos; "Synthesis or Eclecticism," by Sidney Hook; "Philosophical Aspects of the Harvard Report," by Harold Taylor; "Freedom and Responsibility in Education," by Claude E. Puffer; "Education and Its Modifiers," by Horace M. Kallen and "Reply," by Raphael Demos.

PHILOSOPHY OF BUSINESS

In a book entitled *Philosophy of Business,* by Rupert C. Lodge (Univ. of Chicago Press), the author undertakes the novel task of interpreting philosophy to the business man. He describes his project as "the first systematic attempt to think out a *Philosophy of Business* and, in so doing, to bring together two sides of human experience which have been growing rather far apart, namely, the academic speculations of philosophers and the practical reflections of businessmen" (v). The author distinguishes three basic types of philosophy—realism, idealism and pragmatism—and delineates the business policies and attitudes fostered by each type of philosophy. All three types of philosophy have their counterparts in business but pragmatism seems to harmonize best with the American type of economy.

THE NATURE AND FUNCTION OF METAPHYSICS

Signs of the revival of interest in metaphysics are apparent in recent attempts to redefine the methods, the criteria, and the function of metaphysics. The eclipse of metaphysics during the pre-war period was owing in large measure to the anti-metaphysical implications of logical positivism. Extreme positivism sought to discredit metaphysics in its entirety by showing that metaphysical statements are meaningless nonsense because they are empirically unverifiable. The positivist regarded metaphysics as a pretentious pseudo-science consisting entirely of emotive propositions devoid of cognitive significance. The positivistic critique of metaphysics has exerted a salutary influence on philosophy, since a large part of traditional metaphysics was sheer edification having no more cognitive worth than poetry. The present revival of metaphysics, taking cognizance of the positivistic critique by thoroughly examining the methods and criteria and presuppositions of metaphysical enquiry, is proceeding along the following diverse lines: (1) admitting that *most* traditional metaphysics is meaningless, if judged by strict empirical and positivistic criteria of the meaningful, *some* metaphysical statements can meet the most rigid standards of meaningfulness and truth; (2) metaphysics has its own distinctive empirical method. irreducible to the restricted empiricism of the factual sciences; thus metaphysics is conversant with domains of experience: for example the religious and other forms of value-experience, which transcend the domain of sensory fact; (3) the function of metaphysics is the formulation of comprehensive world-schemes, which, though not factually meaningful, have cognitive significance in the organization of knowledge.

A recent criticism of Logical Positivism from the point of view of Critical Realism is found in an article by Roy Wood Sellars, entitled "Positivism and Materialism" (*Philosophy and Phenomenological Research,* Vol. VII, 1, pp. 12-41). Professor Sellars, while sympathetic to certain aspects of empirical positivism, directs his attack against their phenomenalism. "It is my thesis," he says, "that physical things, in the quite literal meaning of that term, that is, the realistic meaning are observable *through* sensory data and that we can make confirmable statements about their structure, probably endurance, and behavior" (*Philosophy and Phenomenological Research,* Vol. VII, 1, p. 23).

Among the indications of a revolt against the violently anti-metaphysical tendencies of logical positivism in its earlier formulations is the recognition even among writers who are positivistically oriented of the significance of metaphysics. E. T. Mitchell in an article on "Metaphysics and Science" (*Philosophy of Science,* Vol. III, 4, pp. 274-280) writes: "Mainly metaphysical speculation differs from scientific hypothesis in scope" (p. 274) and concludes his article with the statement: "Metaphysical speculation serves an essential function in the intellectual enterprise and in personal and social action. If metaphysics were buried by philosophers it would rise again among scientists and laymen" (p. 280). In an article in the same issue of *Philosophy of Science*, David L. Miller similarly contends that metaphysics makes an essential contribution to the methodology of science and to an understanding of the wider implications of science: "Metaphysics; in speculation, is guided by phenomena in physics, and is never unrelated to phenomena. Yet such speculation always goes beyond phenomena in an attempt to complete the physical system" (p. 282).

One of the features of the forty-second Annual Meeting of the Eastern Division of the American Philosophical Association, held at Sarah Lawrence College, Feb. 21-23, 1946, was a symposium on "Metaphysics. Its Function, Consequences, and Criteria." Prof. W. E. Hocking, the first speaker, advocated the synoptic definition of metaphysics "as the systematic effort to know the real and the whole." The real, he defined as "independent being on which other things depend." Whereas the task of science is empirical and descriptive, the task of science is explanatory. "The problem of explanation involves the recognition of necessity, and is dialectical in method" (*The Journal of Philosophy,* Vol. XLIII, 3, p. 62; also Vol. XLIII, 15, esp. pp. 371-78).

Prof. Sterling P. Lamprecht, in the same symposium, while acknowledging the value of the synoptic definition as an ideal of the unity of all knowledge, questioned its realizability. He proposed a more modest conception of metaphysics as a problematic and hypothetical science "which seeks to formulate, in terms that will apply to any and everything which exists, the meaning of cause and effect, the sense in which the course of events is both determined and contingent, the relation of causality and chance and contingency, the nature of law in the course of events, the relation of natural law to particular events which are said to 'obey' the law, the sense in which the existential order is teleological, the degree and kind of unity the world has, the relation of structure and function, the relation of actuality and potentiality, the meaning of becoming or of process, the status of mind in nature, etc." (*Journal of Philosophy,* Vol. XLIII, 3, pp. 63-4; also Vol. XLIII, 15, pp. 393-401.)

Prof. J. H. Randall, Jr. also repudiated the synoptic definition of metaphysics as the search for "the whole" or "the Real" and attacked as particularly vicious the traditional definition of metaphysics as the science of reality as opposed to appearance. "The contrast between reality and appearance is a distinction of value, not of existence. Everything encountered is somehow real; the significant question is not whether it is 'real' or not, but how and in what sense it is real" (*Journal of Philosophy,* Vol. XLIII, 3, p. 66; also Vol. XLIII, 15, p. 407). Professor Randall proposed a Deweyan reflective definition of the function of metaphysics as the "criticism of criticism," "the ground-map of the province of criticism." "The metaphysical analysis of any specific subject-matter is to be defined as a critical analysis of its distinctive traits, of the intellectual instruments or concepts for dealing with it, and of its implications for the nature of existence" (*Journal of Philosophy,* Vol. XLIII, 3, p. 67; also Vol. XLIII, 15, p. 411). Metaphysics does not possess a method *sui generis* but shares the empirical method of the sciences. "For the empirical metaphysician, his method is no different from the ordinary experimental methods of observation and tested generalization employed in any existential science, and his conclusions share in the probable and corrigible character of the findings of all experimental science" (*Journal of Philosophy,* Vol. XLIII, 3, p. 67).

THE HISTORY OF IDEAS

Investigation of the history of ideas, continues as one of the most absorbing interests of contemporary American philosophy. These studies in the history of ideas exemplify several divergent approaches to the history of ideas, each of which has its advocates among historians of ideas: (1) The narrowly intellectualistic approach, which sees in the history of ideas a dialectical development governed by the internal logic of the meanings of these ideas, an approach which stems largely from Hegel and which either ignores the influences on the history of thought of the social and cultural milieu or considers such influences accidental and negligible; (2) the narrowly socio-historical approach which considers the philosophical ideas as mere reflections and useful indices of the basic social technological and cultural forces operative in human history; (3) the narrowly philosophical approach which regards the history of philosophy as a mere repository for past philosophical ideas from which the creative philosopher may derive his inspiration and materials for his own constructive thought. Each of the approaches, in its exclusive version, is narrow and restrictive but there is a growing appreciation that a fruitful history of ideas may combine all three approaches and thus that the history of philosophy, when properly interpreted, presents strands of continuously developing ideas and concepts which are causally related to their socio-historical medium and which make a positive contribution to contemporary philosophical enterprise.

Prof. Abraham Edel, in a paper entitled "Levels of Meaning and the History of Ideas," distinguishes between a history of ideas which seeks to discern the immanent patterns in the development of an idea and a study of the genesis of an idea in its socio-historical matrix. Professor Edel's paper advocates an historical method which, though it stresses the causal nexus of the idea, does not preclude a consideration of its meaning and socio-historical significance. Prof. Paul Oskar Kristeller, in a paper on "The Philosophical Significance of the History of Thought," rejects the Hegelian extreme identification of philosophy and the history of philosophy, but insists that philosophical history *is* an integral part of philosophy (*Journal of Philosophy,* Vol. XLIII, 3, pp. 68-9). Prof. Philip P. Wiener attacks the extreme intellectualist who imputes the genetic fallacy and the errors of historicism to philosophers who advocate an historical method in philosophy and finds that "the cumulative continuity of the history of thought has currently significant methodological, epistemological, and cultural implications" (*Journal of Philosophy,* Vol. XLIII, 3, p. 69; the three papers of the symposium are published in full in the *Journal of the History of Ideas,* VII, 3). The catholicity of the three contributors who, though differing in emphasis, recognize the three-fold function of the history of ideas, is an encouraging sign in this important branch of philosophical-historical study.

ANTHROPOLOGY AND ETHNOLOGY

By Marian W. Smith
Department of Anthropology, Columbia University

EMPHASIS ON PACIFIC ISLAND AND ASIATIC CULTURES

It was noted in 1945 that the extensive demands of the war upon academic curricula in anthropology and ethnology had served to emphasize interest in Pacific Island and Asiatic cultures, and in the lives of the peoples of Europe. This interest has now become one of the major trends in modern anthropology.

Courses in Asiatic and European materials have increased in number, and an ever-increasing amount of research time is being devoted to these fields, earlier hardly recognized within the provenience of anthropology and ethnology. This new area of investigation in anthropology was foreshadowed by certain pioneer studies, but the application of anthropological methods to highly developed Asiatic and European civilizations, and the general acceptance of such research within the standard academic curricula, serves to cloud any previously held distinctions between primitive and advanced cultures. Social scientists in general, and anthropologists in particular, are working more and more in terms of a basic unity of mankind in respect to innate characteristics and to mental and cultural processes.

At the same time, there has been in anthropology a growing interest in the reexamination of basic theoretical considerations and an increasing awareness of the continuing value of the classic areas of investigation. Work in the so-called primitive field has not abated.

THE PRIMITIVE FIELD

The Arctic Institute of North America has expanded its work in Alaska, Canada, and Greenland. Margaret Lantis, for instance, returned to Nunivak Island to obtain additional information on the Eskimo there. A volume on the social culture has already appeared under the auspices of the American Philosophical Society, and a volume on ceremonialism is in press under the auspices of the American Ethnological Society.

The American Indian work has continued in all its previous branches and has shown a sustained interest in Latin America. Several volumes of the *Handbook of the Indians of South America* have been issued under the editorship of Julian H. Steward and the auspices of the Bureau of American Ethnology, Smithsonian Institution. The John Simon Guggenheim Memorial Foundation, which has awarded a series of fellowships each year since 1930 to artists, scholars, and scientists from certain Latin American countries, announced the extension of the program to Colombia, Ecuador, Paraguay, and Bolivia. Thirty fellowships were granted to citizens of Argentina, Brazil, Chile, Cuba, Mexico, and Uruguay in the fields of anthropology, music, art, medicine, chemistry, and history. The University of Chicago Library announced the publication, in the medium of microfilm, of a series of manuscripts on the ethnology and linguistics of Middle America embodying the major field work done in the area over the past 15 years. These manuscripts will not be published in other form.

There has been a pronounced revival in the field of primitive art. Beginning with an exhibit of "The Art of the Pacific" at the Museum of Modern Art, New York, a popular interest in primitive art has been paralleled by a growing attention to these materials on the part of the fine arts specialists. An *Outline Guide of Pacific Art* by Paul Wingert appeared and a similar outline of African Art is scheduled. Enthusiasm for this field is somewhat dampened by information received from abroad as to the total or partial destruction of irreplaceable collections of primitive art materials formerly housed in the great museums of Europe.

PHYSICAL ANTHROPOLOGY

Problems of race continued to be a matter of major concern to many anthropologists. Lectures and popular articles reiterated the sober facts of racial equality as opposed to prejudicial racism.

A Summer Session in Physical Anthropology was held in New York with headquarters at the School of Physicians and Surgeons and the Viking Fund. Sherwood Washburn, secretary of the American Association of Physical Anthropologists, and Paul Fejos were largely instrumental in inaugurating this program which promises to be repeated in the future. One immediate result was the publication of a *Yearbook of Physical Anthropology*, under the auspices of the Viking Fund, which reprinted key contributions in 1945 in physical anthropology and related fields.

ARCHAEOLOGY

Seven institutions cooperated with the Institute of Andean Research in an extensive archaeological expedition to the Virú Valley on the northern coast of Peru. These, with the personnel concerned were: the Bureau of American Ethnology (Gordon W. Willey and F. Webster McBryde), Institute of Social Anthropology of the Smithsonian Institution (Julian H. Steward), Columbia University (William Duncan Strong, James A. Ford, and Clifford Evans), Yale University (Wendell C. Bennett), American Museum of Natural History (Junius Bird), Instituto de Estudios Etnológicos de Peru (Jorge Muelle). The valley is near the great ruins of Chanchan, and it is planned to augment the archaeological work with sociological work within the present valley population.

In addition to participation in the Virú Valley project the Chicago Natural History Museum had an expedition working on a Mogollon site in New Mexico under the direction of Paul S. Martin. The University of New Mexico Sixteenth Annual Field Session program under the direction of Paul Reiter worked at a surface site and a cave site just outside of Albuquerque. Senior members of the same program undertook limited excavation in caves near the Mexican border in western New Mexico.

The United Fruit Company began a five-year project of archaeological research in the Guatemalan Highlands which aims at the excavation and restoration of some of the late and relatively well-preserved ruins. Operations are under the direction of John M. Dimick, and A. V. Kidder is acting in an advisory capacity for the company.

L. J. Giddings, Jr. spent the summer collecting tree-ring material in the arctic for the University of Alaska and Douglas Leechman of the National Museum of Canada spent a season on the upper Yukon and Porcupine Rivers. The University of Washington conducted a field course in archaeology in the San Juan Islands under the direction of Arden R. King. The John Day region of north central Oregon was worked by the Oregon State Museum of Anthropology of the University of Oregon under L. S. Cressman.

The Robert S. Peabody Foundation for Archaeology, which excavated the famous Boylston Street fishweir in Boston, obtained additional material for analysis from the same sediments as revealed in a foundation excavation a short distance from the original site. Douglas S. Byers conducted a limited reconnaissance and sampling of shell heaps in Hancock County, Maine. The Rochester Museum of Arts and Sciences, in collaboration with the New York State Museum, sent a group under the direction of William A. Ritchie to Howland Island on the Seneca River, New York. The Cincinnati Museum of Natural History engaged in an exploration of a former Indian village site and cemetery one-half mile east of the Union Levee.

A group of 45 specialists in Southwestern archaeology met informally in August at the Laboratory of Anthropology at Santa Fé, continuing the tradition of the Pecos Conferences and Chaco Canyon Conferences. Dr. Emil W. Haury was elected chairman of the meeting and Katherine Bartlett, secretary. The discussions served to emphasize the growing tendency to integrate archaeological findings with other anthropological interests.

FOLKLORE

The Library of Congress established a Folklore Section within its Music Division. Dr. Duncan B. M. Emrich was made chief of the section and Mrs. Rae Korson, reference assistant. The section will perform reference and bibliographical functions and serve as custodian of recordings in its field of specialization, including the Archive of American Folk Song.

The second session of the Folklore Institute of America was held at Indiana University from June 19 to Aug. 16, 1946. The New Mexico Folklore Society, first organized in 1931, was formally reorganized as an active society at the University of New Mexico in May. In the same month the twelfth annual National

Folk Festival was held in Cleveland, and the Texas Folklore Society held its thirtieth annual meeting at Austin. The sixth annual Western Folklore Conference was held at the University of Denver.

The American Folklore Society established a Committee on Research in Folklore with Ann H. Gayton as chairman. The function of the committee will be to report upon work in progress in the field of folklore. In addition to itemizing numerous manuscript materials, the committee reports that six major collections of American Indian myth materials are now in press. The organ of the Hoosier Folklore Society, which had been previously mimeographed, is now being issued as a quarterly under the title of *Hoosier Folklore*. The editor is Ernest W. Baughman of Indiana University. The French Folklore Society's *Bulletin,* which previously appeared in photo-offset, is also now being published in printed form.

MEETINGS

The end of the war has seen a renewal of international relations in anthropology. The International Congress of the Anthropological and Ethnological Sciences, which last met in Copenhagen in 1938, was reconstituted by a meeting of the Permanent Council in April. Sessions were held in Oxford and later in London. A. L. Kroeber represented the United States, and delegates from 16 other countries were present. A conference on Peruvian archaeology was held at the Museo Rafael Larco Herrera, Hacienda Chiclín, in August, for the promotion of greater intellectual exchange and cooperation between Peruvian and North American scholars.

The forty-fifth annual meeting of the American Anthropological Association was held at the Palmer House in Chicago Dec. 27-31 in conjunction with the American Association of Physical Anthropologists, the American Folklore Society, Linguistic Society of America, Society for Applied Anthropology, and Society for American Archaeology. Symposia on Africa and early man were featured. In addition to the scientific materials presented, the Committee on Reorganization of the American Anthropological Association offered a report of their year's work recommending certain constitutional changes.

The Linguistic Circle of New York, now in its second year, held monthly meetings with speakers from various related branches of linguistic studies. The American Ethnological Society and the Anthropological Section of the New York Academy of Sciences held frequent meetings with speakers at the American Museum of Natural History in New York; the Viking Fund held meetings in their own building in New York; and other organizations such as the Central States, Philadelphia and Washington branches of the American Anthropological Association, and university groups, held important meetings of a similar nature throughout the country. One feature which emerged at these meetings was the increasing emphasis upon the use of visual materials, including motion pictures.

The Anthropological Section of the American Association for the Advancement of Science met with other sections and affiliated societies of the Association in Boston Dec. 26-31. One of the anthropological sessions was devoted to a relatively new field, that of economic anthropology, which was approached from modern American Indian and Japanese materials and considered in the light of theory and method.

PERIODICAL PUBLICATIONS

American Anthropologist
450 Ahnaip St., Menasha, Wis.
American Journal of Physical Anthropology
36th Street and Woodland Ave., Philadelphia.
American Journal of Psychiatry
9 Rockefeller Plaza, New York City.

American Journal of Psychology
Cornell University, Ithaca, N. Y.
American Journal of Sociology
5750 Ellis Ave., Chicago.
American Political Science Review
Northwestern University, Evanston, Ill.
American Scientist
Yale University, New Haven, Conn.
International Journal of Ethics
5750 Ellis Ave., Chicago.
Journal of Abnormal and Social Psychology
374 Broadway, Albany, N. Y.
Journal of Comparative Psychology
Mount Royal and Guilford Aves., Baltimore, Md.
Journal of Educational Psychology
10 East Centre St., Baltimore, Md.
Journal of Educational Sociology
32 Washington Place, New York City.
Journal of Experimental Psychology
1822 Sherman Ave., Evanston, Ill.
Journal of General Psychology
Commercial St., Provincetown, Mass.
Journal of Philosophy
515 West 116th Street, New York City.
Journal of Social Psychology
Commercial St., Provincetown, Mass.
Mental Hygiene
State Office Building, Albany, N. Y.
Philosophical Review
55 Fifth Ave., New York City.
Psychoanalytic Review
70 Pine Street, New York City.
Psychological Review
1822 Sherman Ave., Evanston, Ill.
Science
Smithsonian Institution Building, Washington, D. C.
Scientific Monthly
Smithsonian Institution Building, Washington, D. C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE, 3457 Walnut St., Philadelphia, Pa.
AMERICAN ANTHROPOLOGICAL ASSOCIATION, American Museum of Natural History, New York City.
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, Smithsonian Institution Building, Washington, D. C.
AMERICAN ECONOMIC ASSOCIATION, Northwestern University, Evanston, Ill.
AMERICAN ETHNOLOGICAL SOCIETY, Columbia University, New York City.
AMERICAN GENETIC ASSN., 1507 M St., N.W., Washington, D. C.
AMERICAN PHILOSOPHICAL SOCIETY, 104 S. 5th St., Philadelphia, Pa.
AMERICAN POLITICAL SCIENCE ASSN., 105 Harris Hall, Northwestern University, Evanston, Ill.
AMERICAN PSYCHIATRIC ASSN., 9 Rockefeller Plaza, New York City.
AMERICAN PSYCHOLOGICAL ASSN., University of Michigan, Ann Arbor.
AMERICAN PSYCHOPATHOLOGICAL ASSN., 520 Commonwealth Ave., Boston.
AMERICAN SOCIETY FOR PSYCHICAL RESEARCH, 40 E. 34th St., New York City.
AMERICAN SOCIOLOGICAL SOCIETY, U. S. Dept. of Agriculture, Washington, D. C.
NATIONAL COMMITTEE FOR MENTAL HYGIENE, 1790 Broadway, New York City.
NATIONAL INSTITUTE OF SOCIAL SCIENCES, 271 Madison Ave., New York City.
PSYCHOLOGICAL CORPORATION, 522 Fifth Ave., New York City.
SOCIETY FOR AMERICAN ARCHAEOLOGY, Illinois State Museum, Springfield, Ill.

PART SEVEN

THE HUMANITIES

DIVISION XXV

LITERATURE AND LANGUAGE

FICTION

By MAY LAMBERTON BECKER
READER'S GUIDE, *New York Herald Tribune*

PRIZES AND AWARDS

The decision of the Pulitzer Prize committee, announced in 1946, to award no fiction prize for 1945 was received not only without strong protest but, apart from commercial interests concerned, with something approaching satisfaction. All that could be said for that period was that a level of competent mediocrity was well maintained, and not much more.

The lesser prizes of the year were thoughtfully awarded: the significant Harper prize went to *Wasteland*, by Jo Sinclair, the pseudonym of Ruth Seid, a character study of a news photographer, revealed in talks in a psychoanalysis office, of a situation and a state of mind tragically familiar to those concerned with the problems of a racial minority. The interest now being taken among thoughtful Americans in any feature of this general problem was reflected in the award of the Intercollegiate Prize to Karon Kehoe's *City in the Sun,* a novel of a Japanese family and its surroundings in an Arizona relocation center. The League of American Penwomen gave its prize to *This Side of Innocence,* a best-seller by Taylor Caldwell.

The Southern Authors' Award which has previously gone to books of the caliber of Richard Wright's *Black Boy,* Harnett Kane's *Plantation Parade,* and Robert Molloy's *Pride's Way,* having led off with *Gone With the Wind,* maintained its judgment this year by choosing Josephine Pinckney's Charleston novel, *Three O'Clock Dinner.* Another Southern region, Kentucky coal-mining country, appeared in *Tomorrow Achieved,* by William R. Furr, winning the Chapman Prize for a novel of contemporary life, and the prize annually offered by *Red Book Magazine* in collaboration with Dodd, Mead, was won by Loula Grace Erdman's *Years of the Locust,* which takes place in a small Midwestern community. The Doubleday Prize went to *Before the Sun Goes Down,* by Elizabeth Metzger Howard.

BESTSELLERS

Among the bestsellers whose popularity kept up throughout the year was a satirical attack on the radio-advertising business, Frederick Wakeman's *The Hucksters,* whose success was largely owing to the surcharged state of popular feeling on this subject. J. P. Marquand's *B.F.'s Daughter,* coming late in the season, went at once to the head of the sales column, largely on the cumulative effect of his earlier novels; its post-war fatigue and pervading sense of aimlessness after the let-down of artificial heroics, make it a disquieting document of its time. The state of mind in Arthur Koestler's *Thieves in the Night,* was that of the violent commotions of modern Palestine. *All the King's Men,* by Robert Penn Warren, drove its way to general popularity by the sustained drive of its story of a Southern political boss—suggesting Huey Long—and won critical approval by the color and power of its presentation; it was an outstanding novel of the year. The third novel of the Flicka series, *Green Grass of Wyoming,* by Mary O'Hara, though complete in itself, revealed the series as really a three-part novel; its place in popular literature seems assured by its treatment of themes perennially beloved by the American reading public and too often worked out by formula, with originality and vitality. Conrad Richter's beautiful novel of the Ohio frontier, *The Trees,* (1940); goes on in its successor, *The Fields,* a distinguished addition to fictional treatment of early American history.

LITERATURE OF PROTEST

Later in the season the prosecution of Edmund Wilson's *Memoirs of Hecate County* made this collection of satiric short stories a center of controversy and aligned it with the "literature of protest" now being put forward by "intellectuals." The return of the word "intellectual" to something approaching everyday use is in itself a minor sign of the times. Granville Hicks, in *Small Town,* a faintly fictionized study of personal experience as resident in such a community, uses the word, "pretentious and dogmatic" as it is, apparently because it has taken on a meaning that fits the moment.

DREISER AND OTHERS

There was a posthumous novel about a Quaker family by Theodore Dreiser, *The Bulwark,* which will not add to his stature as an artist, and a good-natured addition to the works of William Saroyan, *The Adventures of Wesley Jackson.* Pearl Buck's *Pavilion of Women* maintained her standard in a study of life and love among cultured, comfortably situated Chinese. John T. Farrell made a minor addition to his output with *Bernard Clare.*

SHOLEM ASCH

Sholem Asch's *East River* belongs in a sense with his *Nazarene* and *Apostle,* a two-part New Testament masterpiece, and with his appeal to conscience in *One Destiny,* for, though it is a realistic novel, on the grand scale, of life on the East Side of New York City, it demonstrates in action the possibility of the voluntary merging, for that destiny, of the ideals of Christian and Jew.

NOVELS OF FAMILY LIFE

There have been several novels of earlier family life, in the predominant character of various regions, such as Mildred Walker's *The Quarry,* in Vermont, and *The Good Crop,* by Elizabeth Emerson, a large Quaker family in Eastern Illinois, from the Civil War period to the present.

NOVELS OF THE SEA

Though the nature of action and suspense in Jacland Marmur's *Andromeda* is due to desperate war conditions in the Pacific, this story of a tramp steamer and those on it has qualities well beyond that of a war thriller. *Mr. Roberts,* by Thomas Heggen, is a cargo-ship war story that also qualifies among stories of the sea.

REGIONAL AND HISTORICAL NOVELS

Holdfast Gaines, by Odell and Willard Shepard, returns to the tradition of long stretches of strenuous American history centering in a strong pioneer character. A novel of middle-distance history rapidly receding into the background of New York life is Marjorie Northington's *The House on the Park,* a turn of the century tale strong in the customs of the time among the well-to-do.

It could scarcely be expected that lighter fiction should neglect the possibilities of an atomic age: Pat Frank's *Mr. Adam,* treats with a type of humor that put the book at once on best-seller lists, the problem of what to do about the continuation of the human race. James Branch Cabell brought fantasy into history with the highly imaginative plot of *There Were Two Pirates,* purporting to be what happened to historic Spanish pirate Gasparilla before he became a ghost resident in St. Augustine, Florida. Christine Weston's *The Dark Wood,* a departure from her admirable *Indigo,* dealt with the psychological aftermath of war in lovers' lives. Among regional novels two stand out, Ruth Moore's *Spoonhandle,* for Maine, and for the Deep South, *Delta Wedding,* the first novel of the distinguished author of short stories, Eudora Welty.

SERIES FICTION AND OTHERS

Various series novels pursued their course. Inglis Fletcher's *Toil of the Brave,* fourth to take place in the Albemarle district of North Carolina; the Jalna novels of Mazo de la Roche reached the tenth volume in *Return to Jalna* with its public well in hand; and the fifth of the Hornblower series, C. S. Forester's historical thriller concluded Hornblower's adventures in the Napoleonic period with *Lord Hornblower.* A short novel of restrained power and true understanding, Mort Friedlander's *The Yellow Leaf,* took place in an old folks' home, and though Jerome Wechsberg's *Homecoming,* a work of the same length, is the story of the actual return of an American soldier to his war-wrecked home in Czechoslovakia, it employs in its narration so distinctive a technique of fiction that it may well be included in this survey. Another newcomer among the novelists made a most promising start with a study of youth, aggressive age, and solidified society in a small midwestern city, *The Charity Ball,* by Jessie Scott.

CLINICAL NOVELS

The Snake Pit, by Mary Jane Ward, a pseudonymous study of life in a mental hospital, dealt with the desperate struggle of the human spirit to retain identity in the midst of chaos. Another clinical novel, a first attempt, was *No Wind of Healing,* Dorothy Parker Kines' study of emotional problems in a tuberculosis sanitarium.

BRITISH FICTION IN AMERICA

Now that in respect to books the Atlantic is no longer, as in the past six years, a one-way street open only to military traffic, British fiction is once more represented on the publishing lists of America in greater variety than could be provided in wartime by a few established writers with a large public assured in advance. *The Fair Field,* by Robert Moore, a beautifully rounded story of a small English town as remembered through a far-flung lifetime, was received by a discriminating audience with the same enthusiasm it aroused in England as *Portrait of Elmbury.* George Orwell's *Animal Farm* showed in satire, more tolerant than bitter, how easy it would be for brutal dictatorship to make use of the ideals of democracy. T. H. White, whose modern treatment of Arthurian legend struck out a new path in an old field, gave an even more unusual handling to the descendants of the Lilliputians brought to buy land by Lemuel Gulliver, in the delicately satiric *Mistress Masham's Repose.* W. Somerset Maugham's *Then and Now* has for its hero Nicolo Macchiavelli; Kate O'Brien's *For One Sweet Grape* centers in Philip II of Spain and Ana de Mendoza; Bruce Marshall's *Yellow Tapers for Paris,* is a realistic, sympathetic presentation of pre-war spiritual disintegration. Barbara Fitzgerald's *We Are Besieged,* is the story of a minority group, a Protestant Unionist family in the Dublin of the 1920's. A. A. Milne's *Chloe Marr* attempted a new technique in the indirect presentation of a character through its effect on others. Two Yorkshire novelists did some of their best work in 1946: J. B. Priestley's *Bright Day,* true to the region's scene and character; Phyllis Bentley's *The Rise of Henry Morcar,* personality and problems of a successful self-made man, woven into the fabric of the wool trade which Miss Bentley has installed in British literature.

Rumer Godden's *The River,* is in Bengal, where a small child discovers life. Stella Gibbons' heroine in *The Gentle Powers* breaks away from small town life into artistic circles of post-war London. Barbara Noble's *Doreen* is a sensitive, sensible study of a slum child transplanted in wartime evacuation. In Stephen Bagnall's *The Crater's Edge,* a wounded man lying in a shell crater lives through the loves of his life. Angela Thirkell's *Miss Bunting* uses the same milieu and methods that have endeared her to so many Americans. Nancy Mitford's comedy of manners, *The Pursuit of Love,* proved that light fiction need not be light-weight; so did Eric Linklater's *Private Angelo.* In G. B. Stern's *The Reasonable Shores,* a charming, tenacious parasite conditions life for his family circle. Nigel Balchin's dramatic *Mine Own Executioner,* involves psychiatry. Evelyn Waugh's *Brideshead Revisited* is a story of a wealthy Roman Catholic family between the two world wars.

The American following of C. S. Lewis, steadily and rapidly increasing since *The Screwtape Letters,* was further augmented by *That Hideous Strength,* a fantasy of the type of his *Perelandia.* Margery Sharp, whose popularity has been hitherto based on the gayety of her romances, greatly increased it by *Britannia Mews,* a richly realized story of character developing solidly from Victorian ideals to the present in a steadily changing London.

THE SHORT STORY

The short story, whose publication in book form had been largely in abeyance during the war, returned in unusual strength. Stephen Vincent Benet's latest stories were collected in *The Last Circle,* a posthumous collection that shows no let-down from his high standards. Paul Green had another volume of stories of the South, *Salvation on a String,* and Jesse Stuart of mountain life in Kentucky, *Tales from the Plum Grove Hills.* Victoria Lincoln's *The Wind at My Back* included three novelettes concerned with childhood and youth. Edward Newhouse's *The Iron Chain* had 20 stories recording war's effect on the human spirit. Irwin Shaw's stories in *Act of Faith* reflected war with deep feeling. Kay Boyle made her own selection, including some long out of print, for her volume of *Thirty Stories.* James T. Farrell's *When Boyhood Dreams Come True* included a play written in collaboration with his wife. Minor incidents and keen appraisal characterized *Borrowed Summer* and other stories by Elizabeth Enright; *An Afternoon* by Elizabeth Parsons; and two collections from *The New Yorker, The Pleasure Was Mine,* by James Reid Parker, and *French Follies and Other Follies,* by Francis Steegmuller. The ironic insight of Rhys Davies distinguished his volume from overseas, *The Trip to London.*

POETRY

By August Derleth
Author and Editor

GENERAL

A slightly greater number of volumes and collections of poetry was published in America during 1946 than in the preceding war years. Several distinguished volumes dealing with poetry saw publication, among them *A History of American Poetry, 1900-1940,* by Horace Gregory and Marya Zaturenska (Harcourt); *William Blake: The Politics of Vision,* by Mark Schorer (Holt); and *The Nature of Poetry,* by Donald A. Stauffer (Norton). The Yale Younger Poets volume of the year was *Family Circle,* by Eve Merriam, with a foreword by Archibald MacLeish, and Eve Triem's *Parade of Doves* (Dutton) was the book award of the League to Support Poetry.

Various awards of the year in poetry were made. The Shelley Award went to Karl Shapiro, who was also named as Consultant in Poetry in English by the Library of Congress. The Harriet Monroe Prize was awarded to Wallace Stevens, and the Lola Ridge Awards were given to Jules Alan Wein and Sidney Shanker. Three poets were named Guggenheim Fellows: Randall Jarrell, Gwendolyn Brooks, and George Zabriskie. *Poetry*'s annual prizes were awarded in 1946 as follows: the Levinson Prize to John Ciardi; the Guarantors Prize to Richard Eberhart; the Young Poets Prize to John Nerber; the Harriet Monroe Lyric Prize to Patrick Anderson; the Edward Bland Memorial Fellowship Prize to John Manifold; the Eunice Tietjens Memorial Prize to Alfred Hayes; the First Appearance Prize to Douglas Newton.

ANTHOLOGIES

Unquestionably the most distinguished anthology of the year was *A Little Treasury of Modern Poetry,* edited by Oscar Williams (Scribner). It is a comprehensive, ably edited volume, which begins with Hopkins and ends with MacNeice; there is also an additional little "treasury" of modern light verse. Of particular interest also are the first *Poetry Society of America Anthology* (Fine Editions), with an introduction by J. Donald Adams, a volume exemplifying the wide variety of talent within the Society; *Dark of the Moon: Poems of Fantasy and the Macabre,* edited by August Derleth (Arkham), the first anthology of its kind in two decades; *The Winged Serpent,* an anthology of American Indian prose and poetry, edited by Margot Astrov (John Day). Of somewhat less importance, though entirely adequate within their boundaries, are *War and the Poet,* edited by Richard Eberhart and Selden Rodman (Devin-Adair); *1000 Years of Irish Poetry,* edited by Kathleen Hoagland (Devin-Adair); *Ted Malone's Adventures in Poetry* (Morrow); *All the Best Dog Poems,* edited by Edwin Burtis (Crowell); and the *Golden Book of Catholic Poetry,* edited by Alfred Noyes (Lippincott).

SELECTIONS AND COLLECTIONS

Few notable selections or collections saw publication in 1946. Perhaps the most interesting was a selection of the country poems of Mark Van Doren, published under the title of *The Country Year* (William Sloane Associates), with delightful illustrations by John O'Hara Cosgrave. Kenneth Patchen's *Selected Poems* (New Directions) revealed that, while Patchen can write extremely well, he is so given to high-jinks in typography as to be for all intent and purpose considerably short of poetic maturity. Dylan Thomas' *Selected Writings* (New Directions) contains a large body of notable poetry by a comparatively new poet who is too little known in America. Stephen Vincent Benét's *The Last Circle* (Farrar, Straus) contains both prose and poetry; though the poems are largely minor, they are still very fine. An adequate selection of Mayaskovsky's verse is afforded in *Mayaskovsky and His Poetry,* edited by Herbert Marshall (Transatlantic Arts), and the best of Lorca is included in *Selected Poems of Lorca,* translated by Stephen Spender and J. L. Gili (Transatlantic Arts). A new translation of *Petrarch's Sonnets and Songs* has been made by Anna Maria Armi (Pantheon).

Other selections or collections meriting the attention of discriminating readers include *Selected Poems,* by Raymond Holden (Holt); *The*

Bridge: Poems 1939-1944, by Ruth Pitter (Macmillan); *Poems: 1938-1945,* by Robert Graves (Creative Age); *Late Lark Singing,* by T. A. Daly (Harcourt); *Collected Poems,* by Theodore Maynard (Macmillan); and *Selected Verse,* by John Manifold (John Day).

LONG NARRATIVE VERSE

Four long narrative poems, each book-length, warrant attention. Each in its own way is distinguished, and one—William Carlos Williams' *Paterson,* Book I (New Directions)—long as it is, is but the beginning of what promises to be one of the longest poems ever written. As usual, Dr. Williams' poem, at times chaotic and uneven, as if written on different planes, is nevertheless commanding and well worthy of study. Norman Rosten's *The Big Road* (Rinehart) is perhaps the most provocative of the long narrative poems; it is a poem about the roads men have made in the progress of civilization, a poem about the Appian Way, the Alcan Highway, etc., done with considerably more power than was potential in Rosten's earlier, shorter work. *Man and Shadow,* by Alfred Kreymborg (Dutton), is an allegory of man's wanderings on the face of the earth. told in the portraits of characters met by a man wandering through New York's Central Park for a day. Kreymborg deliberates on the problems of society and mankind in readable verse. Finally, Helen Wolfert's *Nothing Is a Wonderful Thing* (Simon & Schuster) demands consideration, though it is perhaps less noteworthy than the other long narrative poems of the year.

FIRST BOOKS

Quite possibly the most exciting and distinguished first collection of 1946—though not technically his first, the young poet having had a limited edition of some of his poems published privately in 1945—is Robert Lowell's *Lord Weary's Castle* (Harcourt), a book of sharp, incisive poems, remarkable for their freshness of imagery, the vividness of Lowell's concepts, the mature mastery of form and idea which is evident. Martha Keller's *Brady's Bend and Other Ballads* (Rutgers) is a surprisingly good collection of poems in ballad form; though Miss Keller is far from at her best in her war poems, these comprise the minority of the book; her ballads are excellent. Among the experimentalists who have something to say and say it well, Lorine Neidecker's first book, *A New Goose* (Decker), is outstanding. *North and South,* by Elizabeth Bishop is the Houghton-Mifflin Poetry Prize book; it is very largely orthodox verse, but vivid and fresh and quite unmistakably the product of a strong new talent.

Brewster Ghiselin in *Against the Circle* (Dutton) says what he wishes to say in new idioms, but his verse somehow lacks the strength and force which it ought to have, and it is often too prolix, despite being well worthy of attention. Probably second only in vivid imagery to the verse of Robert Lowell, who is in the classic tradition, is the poetry of Byron Vazakas, in *Transfigured Night* (Macmillan), who is more modern in his treatment of his subjects, and, perhaps because of this, his poems will tend to impress quite apart from their shortcomings, all of which spring from immaturity. Together with the collections by Lowell and Vazakas, two other first books of poetry stand head and shoulders above the others; they are John Nerber's *The Spectre Image* (Simon & Schuster), and *The Earth-Bound,* a first collection by a distinguished master of prose, Janet Lewis (Wells College).

John Waller's *Crusade* (Macmillan) contains some of the best poetry to come out of this war, though Hargis Westerfield's first large collection, *Soldier Words* (Bruce Humphries), also contains some noteworthy, if uneven, war verse. Two first volumes in translation merit reading: *Secret Country,* by Jorge Carrera Andrade, translated by Muna Lee (Macmillan), and *Residence on Earth,* by Pablo Neruda (New Directions).

Among other first volumes, these will also reward reading: Edwina's delightful aphorisms in *Alec the Great* (Crown); *Initiate the Heart,* by Sister M. Maura (Macmillan); *Doomsdays' Cue,* by Robert Tallman (Doubleday); *Dr. Johnson's Waterfall,* by Helen Bevington (Houghton Mifflin), and *The Living Stone,* by Marion S. White (Coward-McCann); two amusing collections of light verse; *Lough Derg and Other Poems,* by Denis Devlin (Reynal & Hitchcock); *The Long Reprieve,* by Hubert Creekmore (New Directions), clearly the work of a sensitive young poet of decisive talent; *The Quiet Center,* by Edith Henrich (William Sloane Associates), simple, compact, refreshing poetry; *Poems from Several Wildernesses,* by Meade Harwell (Swallow); *A Clear Bell,* by Wightman Williams (Cummington); *Rockets in the Afternoon,* by Geoffrey Fitzgerald (Fine Editions); *The Northern Stranger,* by Lysander Kemp (Random); *For the Unlost,* by Josephine Jacobson (Contemporary Poetry); and *Powerful Long Ladder,* by Owen Dodson (Farrar, Straus).

NEW VOLUMES BY FAMILIAR POETS

The largest number of volumes of poetry published in 1946 was the work of poets long familiar to the American reading public. Books were published by the usually steady productive poets like Robert P. Tristram Coffin, whose *People Behave Like Ballads* (Macmillan) is in his usual, most readable vein; and *The Wind-Swept Harp,* by Grace Noll Crowell (Harper), which is no less than Mrs. Crowell's sixteenth collection of poems! Robinson Jeffers published a new, free adaptation of *Medea* (Random), and, after a long silence, Roy Helton again became memorably articulate in a new collection, *Come Back to Earth* (Harper), distinguished for its quiet strength and restraint.

All the poems written by John Gould Fletcher since his Pulitzer prize-winning selection in 1938 appeared in *The Burning Mountain* (Dutton). Edward Weismiller, one-time Yale Younger Poet, published *The Faultless Shore* (Houghton Mifflin), marking a definite advance in mastery of form over his initial volume, *The Deer Come Down,* though that earlier volume contained more graceful and memorable poems. Frances Frost, writing in the naturalist tradition, published *Mid-Century* (Creative Age), and August Derleth appeared with a new slim collection of love lyrics, *Habitant of Dusk: A Garland for Cassandra* (Walden Press). Objectivist Louis Zukofsky had his first collection in some time published by Decker under the title of *Anew,* but, by and large, 1946 was not a particularly good year for the experimentalists, only one other modern poet meriting attention—Ivan Goll, with *Fruit from Saturn* (Hemispheres Editions).

Perhaps the most laudable spiritual verse, strongly religious, was published in *A Man in a Divided Sea,* by the young religious, Thomas Merton (New Directions), a volume of almost classically distinguished poetry. Nancy Bruff's *My Talon in Your Heart* (Dutton), while much touted on the strength of a sex-ridden novel, was perhaps the year's poorest excuse for "poetry," though it was run a close second by the uneven work of Stanton A. Coblentz in *The Mountain of the Sleeping Maiden and Other Poems* (Mill Valley Press). Edith Sitwell's sprightly verse filled *Green Song* (Vanguard), and Seumas O'Sullivan's *Dublin Poems* (Creative Age) afforded ample variety, from the lighter side to the more thoughtful. Genevieve Taggard's *Slow Music* (Harper) is one of that poet's best collections, the result of much introspection, and gives evidence of some marked alteration in approach and poetic method. Still too little appreciated, Haniel Long published a new volume in 1946, *The Grist Mill* (Rydal Press), and Alan Swallow in *The Remembered Land* (Decker), provided convincing proof of his growing awareness and maturity. Josephine Miles, one of the most satisfactory of modern poets, and also one of the most skilled and careful writers, published *Local Measures* (Reynal & Hitchcock), and Richard Aldington appeared with *A Wreath for San Gemignano* (Duell, Sloan & Pearce).

Other collections of merit include *Spirit Level,* by Christopher Morley (Harvard Press), a first collection in some time by the urbane Morley; *The Garden,* by V. Sackville-West (Doubleday); *The Time Piece,* by Frank Kendon (Macmillan); *No Rain from These Clouds,* by Kenneth Porter (John Day); *The Feudalist,* by Woodridge Spears (Fine Editions); *Release the Lark,* by John Black (Fine Editions); *Freedom's Farm,* by Josephine Young Case (Harcourt); and *Stars and Atoms Have no Size,* by A. M. Sullivan (Dutton). The Dierkes Press Award book of 1946 was Joseph Joel Keith's *The Hearth Lit,* which, while not as strong as Keith's two preceding collections, still warrants reading. Few of the usual brochures and collections from the professional poetry publishers merited discriminating attention during 1946.

HISTORY

By Richard W. Leopold
Assistant Professor, Harvard University

PAUCITY OF HISTORICAL STUDIES

During 1946 American historiography continued to suffer, both quantitatively and qualitatively, from the effects of the war. Very few works merit extended special notice, while the number of worthwhile books remained far below the pre-war number. As usual, many of the best contributions were made in the field of biography.

The causes of this continuing depression in history are obvious. Research projects, interrupted by the war, have not yet been carried to completion. Specialists concerned with Europe and Asia are still cut off from source materials. College teachers returning from war service have been, along with their colleagues who remained at their posts, overwhelmed by heavy schedules imposed by swollen enrollments under the G. I. Bill of Rights. Finished manuscripts can not command prompt publication as book firms everywhere grapple with the problems of paper shortages, rising costs of printing, and previous commitments. Prospects for an early amelioration of these conditions are not bright.

WAR HISTORIES

The torrent of war volumes by participants, journalists, and ghost writers did not slacken in 1946, but the more scholarly works by trained historians have not yet appeared. It is possible that the ambitious historical enterprises of the armed forces and civilian agencies, previously noted in these pages, may be curtailed by the rapid demobilization, conflicting policies on security, and a diminution of popular interest. Still it is reasonable to hope that the story of the national effort in the Second World War will be more fully recorded than it was in the First World War. Basis for that hope can be found in J. P. Baxter III, *Scientists against Time* (Little, Brown), a clear but comprehensive account, intended for the intelligent layman, of the Office of Scientific Research and Development.

GENERAL WORKS

Of primary interest to historians is F. S. C. Northrop's *The Meeting of East and West* (Macmillan), a masterly comparative study of Eastern and Western cultures. M. R. Beard's *Woman as Force in History* (Macmillan) is a mature statement of a much-neglected subject. Wallace Notestein considers in an erudite but charming manner the interplay of national character and history in *The Scot in History* (Yale). The importance of Utopias is treated in A. E.

Morgan, *Nowhere Is Somewhere* (North Carolina). *The Story of the Faith* (Macmillan) by W. A. Gifford is subtitled "A Survey of Christian History for the Undogmatic." Two popular accounts of medical progress by Victor Robinson are *White Caps* (Lippincott), the story of nursing, and *Victory over Pain* (Henry Schuman), the story of anesthesia.

Every member of the historical guild should read *Theory and Practice of Historical Study* (Social Science Research Council), a group of essays by C. A. Beard and others devoted "to a fuller understanding of certain methodological problems in the writing of history."

UNITED STATES HISTORY

The most valuable contributions of a general nature dealt in 1946 with the influence of ideas. Joseph Dorfman's two volumes on *The Economic Mind in American Civilization, 1606-1865* (Viking) are the first installment of a larger study. Encyclopedic in character and prolix in style, it breaks new ground in many places. H. W. Schneider's *A History of American Philosophy* (Columbia) is less concerned with systematic expositions by American philosophers than with their views on democracy as a political form and a way of life. The story of American patriotism is competently told, with an emphasis on the years to 1876, in Merle Curti's *The Roots of American Loyalty* (Columbia). Two series of stimulating essays are E. E. Robinson's *The New United States* (Stanford) and C. McA. Destler's *American Radicalism, 1865-1901* (Connecticut College).

ILLUSTRATED HISTORIES

Further impetus was given during 1946 to the growing tendency to describe the American past by contemporary paintings, photographs, woodcuts, and engravings, accompanied by a minimum of textual comment. The third volume of the *Album of American History* (Scribner), edited by J. T. Adams and covering the years 1853-1893, is the most successful thus far. Roy Meredith, *Mr. Lincoln's Camera Man* (Scribner) is more than a biography of Mathew B. Brady; it is an indispensable tool for any treatment of the Civil War. Stefan Lorant's (ed.), *The New World* (Duell, Sloan and Pearce) reproduces as the first pictorial record sixteenth century water-colors of the Huguenot settlements in Florida and the Roanoke colony in Virginia. Bellamy Partridge and Otto Bettmann depict family life from 1850 to 1900 in *As We Were* (Whittlesey); *The Santa Fe Trail* (Random House), assembled by the editors of *Look* magazine, is a popular cavalcade of an important transcontinental road.

THE AMERICAN COLONIES

The sixth volume of L. H. Gipson's monumental but sometimes controversial panorama of the British Empire before the American Revolution is entitled *The Great War for the Empire* (Knopf) and deals with the years of defeat, 1754-1757. R. B. Morris' *Government and Labor in Early America* (Columbia) is a scholarly work that concentrates on the legal and social position of free and bound labor. *America, 1355-1364* (Duell, Sloan and Pearce) represents the latest investigations of H. R. Holand in the pre-Columbian era.

POLITICAL HISTORY

The ever popular Civil War is the subject of four books of varying merit. B. J. Hendrick's *Lincoln's War Cabinet* (Little, Brown) reworks familiar materials with such skill and unobtrusive scholarship as to stamp it an outstanding publication of the year. J. G. Randall's *Lincoln and the South* (Louisiana) is a brief synthesis by a leading Lincoln authority. A full sketch of the Confederacy is attempted in Clifford Dowdey's *Experiment in Rebellion* (Doubleday); while Richmond's checkered war history is traced in A. H. Bill, *The Beleaguered City* (Knopf).

G. E. Mowry, in *Theodore Roosevelt and the Progressive Movement* (Wisconsin), has exploited hitherto unused Roosevelt manuscripts. Less significant essays in political history are R. E. Noble's *New Jersey Progressivism before Wilson* (Princeton) and Marvin Wachman's *History of the Social-Democratic Party of Milwaukee, 1897-1910* (Illinois).

SOCIAL HISTORY

Various aspects of American society claimed the attention of historians in 1946. *Learning How to Behave* (Macmillan) by A. M. Schlesinger, a pioneer in this expanding field, contains a brief but illuminating discussion of the evolution of American manners as reflected in etiquette books.

Willard Sperry's *Religion in America* (Macmillan) is a short survey designed for English readers. Other phases of American religion are considered in E. C. Chorley's *Men and Movements in the American Episcopal Church* (Scribner); F. X. Curran's *Major Trends in American Church History* (America Press); and P. E. Shaw's *The Catholic Apostolic Church, Sometimes Called Irvingite* (Crown).

Developments in American education are reflected in Frank Aydelotte's *The American Rhodes Scholarships* (Princeton); J. T. Ellis' *The Formative Years of the Catholic University of America* (Catholic Historical Association); R. W. Hale, Jr.'s *Tercentenary History of the Roxbury Latin School* (Riverside Press); Barbara Jones' *Bennington College* (Harper); Thomas Le Duc's *Piety and Intellect at Amherst College, 1865-1912* (Columbia); O. M. Voorhees' *History of Phi Beta Kappa* (Crown); and T. J. Wertenbaker's *Princeton, 1746-1896* (Princeton), a readable survey prepared for that university's bicentennial celebration.

LITERARY TRENDS

Literary trends receive attention in Roger Burlingame's *Of Making Many Books* (Scribner), an account of 100 years of publishing by the house of Scribner; F. J. Hoffman, Charles Allen, and Carolyn Ulrich's *The Little Magazines* (Princeton), which rescues from oblivion some short-lived efforts of the 1920's; R. M. Dorson's *Jonathan Draws the Long Bow* (Harvard), a study in New England folklore; and in Horace Gregory and Marya Zaturenska's *A History of American Poetry, 1900-1940* (Harcourt, Brace). Music and the drama are the concern of Rudi Blesh's *Shining Trumpets: a History of Jazz* (Knopf); Raymond Morin's *The Worcester Music Festival, 1858-1946* (Worcester Music Festival); and W. S. Hoole's *The Ante-Bellum Charleston Theatre* (Alabama).

ARCHITECTURE AND MISCELLANEOUS THEMES

The history of American architecture has been enriched by T. T. Waterman's *The Mansions of Virginia, 1706-76* (North Carolina); Deering Davis, S. P. Dorsey, and R. C. Hall, in *Alexandria Houses, 1750-1830* (Architectural Book Publishing Co.); W. H. Kilham, in *Boston after Bulfinch* (Harvard), dealing with the Nineteenth Century; G. A. Cochran, in *Grandeur in Tennessee* (J. J. Augustin), covering the Classical revival; and C. F. Schmidt, in *Greek Revival Architecture in the Rochester Area* (published by the author). Other phases of American art are considered in Frances Lichten's *The Folk Arts of Rural Pennsylvania* (Scribner); Henry Kauffman's *Pennsylvania Dutch* (American Studio Books); and W. E. Howe's second volume of the *History of the Metropolitan Museum of Art* (Columbia), recording the years of expansion from 1904 to 1941.

Miscellaneous social themes are treated in R. S. Jones' *History of the American Legion* (Bobbs-Merrill); Albert Deutsch's *The Mentally Ill in America* (Columbia), an analysis of their care since colonial days; and two popular accounts of famous baseball teams, *The Chicago Cubs* (Putnam) by Warren Brown and *The Detroit Tigers* (Putnam) by W. G. Lieb.

DIPLOMATIC HISTORY

Despite popular preoccupation with world affairs, no major contribution was made during the year to the history of American diplomacy. General in scope but exceedingly brief is Edwin Borchard's, *American Foreign Policy* (National Foundation Press). The Far East continues to claim attention. K. S. Latourette, in *The United States Moves across the Pacific* (Harper), discusses our position in East Asia; F. R. Dulles, in *China and America* (Princeton), retells in an engaging manner American relations with that nation since 1784. More specialized studies include Arthur Walworth's *Black Ships off Japan* (Knopf), the story of the Perry expedition; Daniel Henderson's, *Yankee Ships in China Seas* (Hastings House); and E. H. Zabriskie's, *American-Russian Rivalry in the Far East, 1895-1914* (Pennsylvania). Diplomatic action affecting Jews during the last century is the theme of *With Firmness in the Right* (American Jewish Committee) by Cyrus Adler and A. A. Margalith. A. C. Millspaugh recounts his missions to Iran in *Americans in Persia* (Brookings). Recent developments are treated in C. A. Beard's *American Foreign Policy in the Making, 1932-1940* (Yale), a minute and sometimes misleading examination of Roosevelt's public utterances, done in the manner of a prosecuting attorney, and in Vera M. Dean's *The Four Cornerstones of Peace* (Whittlesey), a résumé of the conferences at Dumbarton Oaks, Yalta, Mexico City, and San Francisco.

CONSTITUTIONAL HISTORY

C. B. Swisher's *The Growth of Constitutional Power in the United States* (Chicago) is a readable summary by a recognized authority of the developing conceptions of the Constitution through the decisions of the U. S. Supreme Court. C. O. Gregory's *Labor and the Law* (Norton) covers the legal status of the workingman from the days when belonging to a union was a crime. More specialized are B. H. Nelson's *The Fourteenth Amendment and the Negro since 1920* (Catholic) and M. R. Konvitz's *The Alien and the Asiatic in American Law* (Cornell).

ECONOMIC HISTORY

Significant books on economic subjects were few in number in 1946. Continuing interest in business history was reflected in S. B. Clough's *A Century of American Life Insurance* (Columbia), dealing with the Mutual Life Insurance Co. of New York. The oil industry is treated in S. W. Tait, Jr.'s *The Wildcatters* (Princeton); Harry Botsford's, *The Valley of Oil* (Hastings House); and C. M. Wilson's, *Oil Across the World* (Longmans, Green), a saga of American pipelines. *America's Fabrics* (Macmillan) by Zelma Bendure and Gladys Pfeiffer is an exhaustive treatise. Different phases of transportation are considered in Edward Hungerford's *Men of Erie* (Random House); Devon Francis' *The Story of the Helicopter* (Coward-McCann); W. N. Leonard's *Railroad Consolidation under the Transportation Act of 1920* (Columbia); and B. R. Brazeal's *The Brotherhood of Sleeping Car Porters* (Harper). The human resources of the South are authoritatively discussed in *All These People* (North Carolina) by R. B. Vance and Nadia Dainlevsky. W. R. Van Dersal and E. H. Graham tell the story of soil conservation in *The Land Renewed* (Oxford); D. M. Ellis' *Landlords and Farmers in the Hudson-Mohawk Region, 1790-1850* (Cornell) is a scholarly presentation.

REGIONAL AND LOCAL HISTORY

Except for a few items, the American West was singularly neglected in 1946. Walter Havighurst's *Land of Promise* (Macmillan) is a popular treatment of the Northwest Territory. Indian affairs are the concern of Grant Foreman in *The Last Trek of the Indians* (Chicago) and M. L. Starkey in *The Cherokee Nation* (Knopf). W. R. Hogan's *The Texas Republic* (Oklahoma) is a social and economic history of the Lone Star government. Wayne Andrews' *Battle for Chicago* (Harcourt, Brace) recounts the contest for domination of the Windy City by the new aristocrats of industry and journalism. Other books of local interest are R. E. Barclay's

Ducktown (North Carolina) and Mrs. Lipscomb Norvell's *King's Highway* (published by the author).

The many series dealing with American lakes, rivers, mountains, and cities continue to produce volumes that are part history, part guide books, and part fiction, the exact proportion depending upon the competency of the author. The best of the year are F. F. Van de Water's *Lake Champlain and Lake George* (Bobbs-Merrill); Donald Davidson's *The Tennessee* (Rinehart), the first of two installments; C. P. Smith's *The Housatonic* (Rinehart); and Carey McWilliams' *Southern California Country* (Duell, Sloan and Pearce). Less successful are W. A. Roberts' *Lake Pontchartrain* (Bobbs-Merrill); Frank Waters' *The Colorado* (Rinehart); and I. McC. McMeekin's *Louisville: The Gateway City* (Julian Messner).

MILITARY AND NAVAL HISTORY

Aside from war histories, considered elsewhere, only two books are worthy of notice. Alfred Vagts' *Landing Operations* (Military Service Publishing Co.) is an encyclopedic survey of strategy and tactics from ancient times. D. W. Mitchell's *History of the Modern American Navy* (Knopf) makes no original contribution but does combine in one volume the findings of other scholars.

THE OTHER AMERICAS

The exploits of Lewis and Clark, Balboa, and Alexander Mackenzie are skillfully retold in *The Westward Crossings* (Knopf) by Jeannette Mirsky. J. A. Crow's *The Epic of Latin America* (Doubleday) is a popular account, somewhat weak on the later period. Other books about our neighbors north and south are John McDiarmid's *Commercial Policy in the Canadian Economy* (Harvard); S. W. Eastman's *Canada at Geneva* (Bruce Humphries); Miron Burgin's *Economic Aspects of Argentine Federalism, 1820-1852* (Harvard); P. E. James' *Brazil* (Odyssey); and T. L. Smith's *Brazil: People and Institutions* (Louisiana).

EUROPEAN HISTORY

Deprived of customary source materials, American scholars could make but limited contributions in 1946 to the history of countries other than their own. Perhaps the outstanding work of the year on a non-American subject is A. A. Vasil'ev's *The Russian Attack on Constantinople in 860* (Medieval Academy of America).

Books on the Ancient and Medieval eras include Jack Finegan's *Light from the Ancient Past* (Princeton), the archeological background of the Hebrew-Christian religion; W. W. Hyde's *Paganism to Christianity in the Roman Empire* (Pennsylvania), and E. H. Kantorowicz's *Laudias Regiae* (California), a study in liturgical acclamations and Medieval ruler worship.

For the Modern period the following should be noted: Stephen Bonsal, *Suitors and Suppliants* (Prentice-Hall), the role of the small nations at the 1919 Peace Conference; R. P. Casey, *Religion in Russia* (Harper); T. G. Chase, *The Story of Lithuania* (Stratford House); K. A. Douglas, *The French Railroads and the State* (Columbia); Nathan Edelman, *Attitudes of Seventeenth Century France toward the Middle Ages* (King's Crown Press); Albert Guerard, *France: a Short History* (Norton); S. W. Halperin, *Germany Tried Democracy* (Crowell), a political history from 1918 to 1933; Martin Hill, *The Economic and Financial Organization of the League of Nations* (Carnegie Endowment for International Peace); A. E. Kahn, *Great Britain in the World Economy* (Columbia); J. B. Mason, *The Danzig Dilemma* (Stanford), a study in peacemaking by compromise; S. T. McCloy, *Government Assistance in Eighteenth Century France* (Duke); G. E. Mylonas, *The Balkan States* (Eden Publishing House); Fletcher Pratt, *Empire and the Sea* (Holt), a popular account of England's war against Napoleon; Michael Sayers and A. E. Kahn, *The Great Conspiracy* (Little, Brown), the secret conflict against Soviet Russia; F. L. Schuman, *Soviet Politics at Home and Abroad* (Knopf); N. R.

Smith, *Land for the Small Man* (King's Crown Press), a study of publicly supplied small holdings in England and Wales from 1860 to 1937.

HISTORY OF ASIA AND AFRICA

No single work is outstanding. Among those to be noted are J. C. Archer, *The Sikhs in Relation to Hindus, Moslems, Christians, and Ahmadiyyas* (Princeton); Leon Arpee, *A History of Armenian Christianity* (Armenian Missionary Association); Ruth Benedict, *The Chrysanthemum and the Sword* (Houghton, Mifflin), a summary of patterns of Japanese culture; Nelson Glueck, *The River Jordan* (Westminster Press); W. S. Haas, *Iran* (Columbia); G. E. von Grunebaum, *Medieval Islam* (Chicago).

BIOGRAPHY

By MALCOLM OAKMAN YOUNG
REFERENCE LIBRARIAN, PRINCETON UNIVERSITY

GENERAL

To the Fiftieth Anniversary Number of *The New York Times Book Review,* dated Oct. 6, 1946, the biographer Marquis James contributes "Opening New Horizons for the Biographer," an interesting and illuminating survey of American biographies written since 1896. As if to complement this, there appeared in the *Saturday Review of Literature,* May 18, an article by J. C. Long, "Biography Now and Tomorrow." Both articles are thought provoking. On the technique of biography writing, the student should read the foreword to Laura L. Hinkley's *Charlotte and Emily: The Brontës* (Hastings). The Pulitzer Prize was awarded to the life of John Muir, *Son of the Wilderness,* by Linnie Marsh Wolfe.

COLLECTIVE WORKS

Stewart H. Holbrook's *Lost Men of American History* (Macmillan) portrays obscure men who have played significant parts in the development of the country. Seventeen essays on as many individuals make up Hermann Hagedorn's *Americans* (Day) and include, among others, Mark Twain, John Dewey, Woodrow Wilson. A chapter on Wilson is also found in *Great Teachers* (Rutgers Univ. Press), edited by Houston Peterson. Still another essay on Wilson is in *The Lives of Eighteen from Princeton* (Princeton Univ. Press), edited by Willard Thorp. *Public Men: In and Out of Office* (Univ. of North Carolina Press), edited by J. T. Salter, has 27 sketches, including such figures as Wendell Willkie, Henry Wallace, President Truman, a composite of our varying types of public officials. *Master Works of Autobiography* (Doubleday), edited by Richard D. Malley, includes condensations of such classical autobiographies as those of St. Augustine, Cellini, Pepys, Rousseau, Henry Adams. David Ewen adds to his list of similar books with *Men and Women Who Make Music* (Readers Press), with 26 sketches. *Fathers of Classical Music* (Beechhurst), by Charles Angoff, deals with lives of predecessors and contemporaries of Bach. *Russian Writers* (International Book Service) is a brief but useful biographical dictionary by Valentine Snow. A useful reference book is *Who's Who in Labor* (Dryden).

THE PRESIDENTS

Thomas Jefferson, American Tourist (Univ. of Oklahoma Press), by Edward Dumbauld, is an interesting account of many journeys in an active life, and of contemporary conditions. Two biographies of James Monroe appeared: *James Monroe,* a scholarly work by W. P. Cresson (Univ. of North Carolina Press), and *The Last of the Cocked Hats* (Univ.

of Oklahoma Press) by Arthur Styron. Likewise, two lives of Zachary Taylor were written: *Zachary Taylor,* by Brainerd Dyer (Louisiana State Univ. Press) and *Old Rough and Ready* (Vanguard), by Silas B. McKinley and Silas Bent.

The collection of works on Lincoln is numerous, as usual. A valuable critical, selective bibliography of Lincolniana is Paul M. Angle's *A Shelf of Lincoln Books* (Rutgers Univ. Press). *Lincoln and the South* (Louisiana State Univ. Press) is by J. G. Randall. *Legends that Libel Lincoln* (Rinehart) is by Montgomery S. Lewis. Another valuable work is Burton J. Hendrick's *Lincoln's War Cabinet* (Little, Brown). Other sidelights are found in F. Lauriston Bullard's *Abraham Lincoln and the Widow Bixby* (Rutgers Univ. Press), and the book by Oliver Carruthers and R. G. McMurty, *Lincoln's Other Mary* (Ziff-Davis), pertaining to Mary Owens. A revealing picture of Lincoln is in the *Diary of a Public Man* (Rutgers Univ. Press), by an unknown author and reprinted, with a foreword by Carl Sandburg, from the text of the 1879 appearance. To be included here, also, is Roy Meredith's *Mr. Lincoln's Camera Man* (Scribner) which deals with Matthew B. Brady.

Theodore Roosevelt and the Progressive Movement (Univ. of Wisconsin Press) is by George Mowry. A factual work is *The True Woodrow Wilson* (Revell) by Harold G. Black. *Woodrow Wilson, Some Princeton Memories* (Princeton Univ. Press), edited by William Starr Myers, includes impressions by several of his academic colleagues. *White House Physician* (Putnam), by Vice-Admiral Ross T. McIntire, reveals sidelights on Franklin D. Roosevelt. *As He Saw It* (Duell), by Elliott Roosevelt, dealing largely with the war years, stirred controversy. One of the books receiving excellent reviews was *The Roosevelt I Knew* (Viking) by Frances Perkins. Readable and illuminating is *Starling of the White House* (Simon and Schuster), memoirs of Col. Edmund Starling of the White House Secret Service Detail during the terms of our last five presidents, as told to Thomas Sugrue.

MEN IN PUBLIC LIFE

In *The Randolphs* (Bobbs, Merrill), H. J. Eckenrode chronicles a family prominent in Virginia and national affairs during early, critical days. *Alexander Hamilton* (Appleton), interpreted by Nathan Schachner, was well received. Another biography of the Vice-President of the Confederacy, *Alexander H. Stephens,* is by Rudolph Von Abele (Knopf). A Pennsylvania politician and educator is portrayed by Robert L. Mohr in his *Thomas Henry Burrowes, 1805-1871* (Univ. of Pennsylvania Press). *The American* (Duell), by Howard Fast, tells in the form of a novel the active story of the former Illinois governor, John Peter Altgeld. *A Georgia Lawyer* (Univ. of Georgia Press) is the autobiography of Stirling Price Gilbert, of the state Supreme Court. *The Wilson Era 1917-1923* (Univ. of North Carolina Press) is the fourth volume in the memoirs of Josephus Daniels. *Journey Through the Years* (Simon and Schuster) is the reminiscences of James M. Cox, once presidential nominee. One of the best received and outstanding books is the scholarly *Brandeis* (Viking) by Alpheus T. Mason. *Bernard M. Baruch* (Page) is a portrait by Harry I. Shumway.

THE MILITARY

General George Crook, His Autobiography (Univ. of Oklahoma Press), edited by Martin F. Schmitt, includes letters and memoirs of a frontier figure. His active life before the Civil War is presented in *Robert E. Lee in Texas* (Univ. of Oklahoma Press) by Carl C. Rister. Two books receiving considerable notice were *Touched with Fire* (Harvard Univ. Press), being the Civil War diary and letters of Oliver Wendell Holmes, Jr.; and *Memoirs of a Volunteer* (Norton) by John Beatty and concerned with the same period. *Born to Fight* (McKay) is Ralph B. Jordan's picture of Admiral William F. Halsey. *Patton, Fighting Man*

(Putnam) is by William B. Mellor, Jr., and *General George S. Patton, Jr.* (Dodd Mead) is by James Welland. General Marshall's wife presents their life together in *Together* (Tupper and Love). Seen from two angles is Gen. Dwight D. Eisenhower: *My Three Years with Eisenhower* (Simon and Schuster), the diary of Capt. Harry C. Butcher; and *Sergeant Mickey and General Ike* (Putnam), the tale of Michael J. McKeogh, orderly.

AUTHORS AND THE PRESS

Isabelle W. Entrikin wrote, as her dissertation, *Sarah Josepha Hale and Godey's Lady's Book* (Univ. of Pennsylvania Press). The Hossier novelist of the late 19th century, Edward Eggleston, is the subject of a book by William P. Randel (King's Crown Press). Perhaps the first all-round biography of Lafcadio Hearn is by Vera McWilliams (Houghton Mifflin). *Hubert Howe Bancroft* (Univ. of California Press) is the story of the historian of the West, by John W. Caughey. Containing much hitherto unpublished material is *Mark Twain, Business Man* (Little, Brown) by his great-nephew Samuel C. Webster. A brief biography is *Edwin Arlington Robinson* (New Directions), a critical study by Yvor Winters. Beautifully written and bringing clearly to the reader the late poet's memories and recalling her ancestors, is the posthumous *The Lost Horizon* (Holt) by Winifred Welles.

Opinions and recollections are found in *And Hearing Not* (Scribner) by the writer and advertising expert E. E. Calkins. Another agreeable book to be read is *The Happy Profession* (Little, Brown) by Ellery Sedgwick, former editor of the *Atlantic Monthly*. Kent Cooper tells in fiction *Anna Zenger: Mother of Freedom* (Farrar) the story of the wife of John Peter Zenger of the early 18th century, whose names are connected with the freedom of the press. The printer, editor, crusader, Horace Greeley, is recalled once more, by Harry L. Stoddard (Putnam). *An Honorable Titan* (Harper) is Gerald W. Johnson's picture of Adolph Ochs of *The New York Times*. Two newspaper men recall their youth: Gene Fowler in *A Solo in Tom-Toms* (Viking), and Charles Driscoll in *Country Jake* (Macmillan). *How to Grow Old Disgracefully* (Duell) is an outspoken self-portrait of the artist, writer, editor, Norman Anthony. What is called a "biography in pictures" is Lee G. Miller's *An Ernie Pyle Album* (Sloane). *Washington Tapestry* (Whittlesey) is the readable story of Olive Ewing Clapper, widow of the correspondent Raymond Clapper. To conclude this section, should be listed one of the most valuable books of the year, *The Autobiography of William Allen White* (Macmillan), which appeared not long after the death of the Emporia newspaper man.

TEACHERS, PREACHERS, AND OTHERS

William Torry Harris, nationally a leader in education, is well drawn in *Yankee Teacher* (Philosophical Library) by Kurt F. Leidecker. The first president of Johns Hopkins University, Daniel Coit Gilman, has as his biographer another educational leader, Abraham Flexner (Harcourt). Rush Rhees, long president of the University of Rochester, is the subject of a work by John R. Slater (Harper). *James Harvey Robinson, Teacher of History* (King's Crown Press) is by Luther V. Hendricks. *River of Years* (Lippincott) is the recollections of the eminent preacher, Joseph Fort Newton. Another life of the great surgeon is *Harvey C. Cushing* (Springfield, Ill., Thomas) by John F. Fulton. Largely concerned with his own career in China is Dr. Edward H. Hume's *Doctors East, Doctors West* (Yale). *Five Million Patients* (Scribner) is by the public health authority, Dr. Allen W. Freeman.

David Rittenhouse (Univ. of Pennsylvania Press) recalls the 18th century scientist, and is by J. Edward Ford. A Hoosier inventor is sketched in Fred Kelly's *David Ross: Modern Pioneer* (Knopf). Two contemporary minor thinkers of the 19th century receive attention in the publication of their journals, with some biographical data: Charles King Newcomb's *Journals* (Brown Univ. Press), edited by Judith K. Johnson; Ezekiel G. C. Wood's *Wandering in the Wilderness* (Dietz Press), journals edited by William E. Wood. Covering practically all American history and most of the professions here mentioned is *The Lowells and Their Seven Worlds* (Houghton Mifflin) by Ferris Greenslet, one of the lasting productions of the year.

VARIOUS ARTISTS

John Lloyd Wright's *My Father Who Is on Earth* (Putnam) is his picture of the unconventional architect, Frank Lloyd Wright. A frank self-revelation is by the painter Ione Robinson, *A Wall to Paint On* (Dutton). *Singin' Yankees* (Univ. of Minnesota) by Philip D. Jordan, presents the New Hampshire family who, from the 1840's until nearly the end of the century, traveled on concert tours. A pioneer in teaching music in schools, Lowell Mason, is portrayed by Arthur L. Rich (Univ. of North Carolina Press). Bruno Walter's *Theme and Variations* (Knopf) is the autobiography of the orchestra conductor. Readable with its anecdotes and personal pictures is *From the Top of the Stairs* (Little, Brown) by Gretchen Finletter, daughter of Walter Damrosch. *Paul Robeson* (Messner) is by Shirley Graham, written for juveniles.

The artist, James Montgomery Flagg, in *Roses and Buckshot* (Putnam), presents a candid picture of himself and of many others. The German artist and refugee, George Grosz, has written an autobiographical work in *A Little Yes and a Big No* (Dial). James J. Sweeney has written of another refugee artist in his *Marc J. Chagall* (Museum of Modern Art). This same artist's wife, Bella Chagall, has written her recollections *Burning Lights* (Schocken Books). *Duke Ellington* (Creative Age) is by Barry Ulanov. *Really the Blues* (Random) is the frank story of the jazz musician Mezz Mezzrow, by himself and Bernard Wolfe. *Stardust Road* (Rinehart) is the self-story of the popular composer Hoagland (Hoagy) Carmichael. *From Gags to Riches* (Fell) is the anecdotal story of Joey Adams, comedian, written by himself. With stories of many celebrities, *Impresario* (Random) is an amusing compilation by the manager, S. Hurok.

INDUSTRIALISTS AND OTHERS

A 19th century Pennsylvania industrialist leads this group: Eleanor Morton has written *Josiah White: Prince of Pioneers* (Day). *Henry Merggs: Yankee Pizarro* (Duke Univ. Press) by Watt Stewart, tells of the man who went to Reno in the 70's and developed railroads and other enterprises. A saga of the Tabors of the Colorado gold mines is *Here They Dug the Gold* (Reynal), by George F. Willison. *Fabulous Empire* (Houghton Mifflin) is Fred Gipson's narrative of George Washington Miller, his sons, and their huge ranch developments in Oklahoma. A pioneer in industrial research is recalled in John T. Broderick's *Willis Rodney Whitney* (Albany, Ft. Orange Press). A colorful railroader is the subject of Frank Cunningham's life of Big Dan Cunningham (Deseret News Press). Hubert Herring's *The Education of George W. Marston* (Pomona College) is the story of a west coast merchant, while Richard E. Day's *Breakfast Table Autocrat* (Moody Press) is the life story of the Chicago manufacturer, Henry Parsons Crowell. A too short, delightful volume is *My Boyhood in a Parsonage* (Harper) by the partner of the Morgans, Thomas W. Lamont.

INFORMAL NARRATIVES

Sometimes verging on fiction, this type of book portrays real characters, typical of American life. *Papa Went to Congress* (Doubleday), by Kenneth Horan, is largely set in the late 19th century. *We Shook the Family Tree* (Random) is a picture of small town life in the 1920's, by Hildegarde Dolson. *Three Parts Scotch* (Bobbs, Merrill) by Guthrie Burton, gives the recollections of a professor's wife. *Skinny Angel* (Whittlesey) is another picture of a professor's family set in the Midwest by Thelma Jones. *Abbie* (Putnam) is a vivid picture of his English aunt, by Dane Chandos. *Grandfather Objects* (Doubleday) presents another amusing figure, by Walter Beebe Wilder. A pleasant portrait of her grandmother is *Right as Rain* (Random) by Bernice Richmond. The list concludes with R. E. Gould's memorable *Yankee Storekeeper* (Whittlesey).

MISCELLANEOUS

To Master—A Long Goodnight (Creative Age) is the title chosen by Brion Gysin for his portrait of the former slave and probable original of "Uncle Tom," Josiah Henson. *Jim Bridger, Mountain Man* (Morrow) is the lively story of a pioneer figure and explorer, by Stanley Vestal. *Last of the Bad Men* (Bobbs, Merrill) is Jay Monaghan's record of Tom Horn.

Women are the subject of several books: *Mary Richardson Walker* (Caxton) in which Ruth K. McKee portrays an early pioneer across the Rockies; Mary Hobson Draper recalls her mother's pioneer experiences in *Though Long the Trail* (Rinehart); *No Time for Tears* (Houghton Mifflin) is the autobiography of Lora Wood Hughes, nurse from early Kansas days to the present.

The center of a long, famous New Orleans lawsuit is Nolan B. Harmon's subject in *The Famous Case of Myra Clark Gaines* (Louisiana State Univ. Press). *American Daughter* (Univ. of Chicago Press) is recollections of the Negro, Era Bell Thompson. An Iowa childhood is recalled in Martin Yoseloff's *No Greener Meadows* (Ackerman). *Broadside to the Sun* (Norton) by Don West, and *For Here Is My Fortune* (Whittlesey) by Amos R. Harlin, are pictures of Ozark farm life and small town life in the Missouri hills respectively.

Eddie Rickenbacker (Macmillan) is Hans Christian Adamson's story of the famous aviator. A thought-provoking book is *Boy from Nebraska* (Harper), Ralph G. Martin's narrative of Ben Kuroki, of Japanese parentage. James R. Fair's *Give Him to the Angels* (Smith and Durrell), is the very frank portrait of the prize fighter, Harry Grebs. Lawyer, architect, politician, book-collector Messmore Kendall labels his reminiscences *Never Let Weather Interfere* (Farrar, Straus). Lilly Daché, milliner, tells of her career in *Talking Through My Hats* (Coward). This varied group ends with two inspiring books: the first by a cripple, Louise Baker, *Out on a Limb* (Whittlesey), and the other by blind Hector Chevigny, *My Eyes Have a Cold Nose* (Yale Univ. Press).

FOREIGN SUBJECTS

Harold Lamb, already known as a chronicler of ancient history, has now produced *Alexander of Macedon* (Doubleday). A study of the man and his work is R. Langston Douglas' *Piero di Cosimo* (Univ. of Chicago Press), as is Arthur S. Rigg's *Titan the Magnificent* (Bobbs, Merrill). *Spinoza* is an analysis by Rudolf Kayser (Philosophical Library). Herbert Weinstock's *Handel* (Knopf) and Karl Geiringer's *Haydn* (Norton) present musicians we associate together. Although a translation from the German, *Secretary of Europe* (Yale Univ. Press) is by a former United States soldier, Golo Mann, and deals with Friedrich von Gentz, "enemy of Napoleon."

The musician, philosopher, doctor, Albert S. Schweitzer, receives honor in a work by George Seaver (Harper). *Pushkin, Poet and Lover* (Doubleday) is by Lydia Lambert. One of the best interpretations of the man and writer is *Leo Tolstoy* (Little, Brown) by Ernest J. Simmons. *Priestess of the Occult* (Knopf) is Gertrude M. Williams' sympathetic story of Madame Blavetsky, founder of the Theosophical Society.

Hugo Leichentritt studies the conductor Serge Koussevitzky, along with the Boston Symphony Orchestra, in a book published by the Harvard University Press. Clarence A. Manning's *Soldier of Liberty* (Philosophical Library) recalls Casimir Pulaski. *In Search of Two Characters* (Scribner), by Dormer Creston, deals with Napoleon I and his son, while the former's sister Pauline receives attention in *Pauline Bonaparte* (Rinehart) by Harrison Brent. *A Prince in Their Midst* (Univ. of Oklahoma Press) is A. J. Hanna's narrative of the adventurous life of Achille Murat on the American frontier.

A valuable study is *Stendhal* (Doubleday), by Matthew Josephson. A well reviewed book was *Geoffrey Chaucer of England* (Dutton) by Marchette Chute. There have been two books on Christopher Marlowe: Charles M. Rinehart's *The Muse's Darling* (Rinehart) and the rather more scholarly *Christopher Marlowe, A Study of His Thought, Learning and Character* (Univ. of North Carolina Press), by Paul H. Kocher. A minor writer of the 17th century is found in Howard W. Troyer's *Ned Ward of Grubstreet* (Harvard Univ. Press). Two scholarly works appeared concerned with a little known dramatist of the 18th century, Arthur Murphy, one by H. H. Dunbar (Modern Language Association) and the other by John P. Emery (Univ. of Pennsylvania Press).

Two doctors of 18th century London are portrayed in *New Aspects of John and William Hunter* (Schuman) by Jane M. Oppenheimer. Together with a panorama of London life are the activities of a journalist, biographer, editor in *Isaac Reed's Diaries 1762-1804* (Univ. of California Press), edited by Claude E. Jones. A fascinating figure and the period 1745-1826 are brought to life in *Lady Sarah Lenox* (Putnam) by Edith R. Curtis. A fabulous character is found in *Raffles of Singapore* (Doubleday) by Emily Hahn. *Charlotte and Emily: The Brontës* (Hastings) by Laura L. Hinkley is a successful production. The minor 19th century poet Owen Meredith (Lord Lytton) receives critical analysis by Aurelia B. Harlan (Columbia Univ. Press).

The months spent by Robert Louis Stevenson in Monterey, Calif., are chronicled in *No More a Stranger* (Stanford Univ. Press), by Anne B. Fisher. Hilton Brown's *Rudyard Kipling* (Harper) is regarded as one of the more successful surveys of the subject. *The Man from Limehouse: Clement Richard Attlee* (International Mark Twain Society), by Cyril Clemens, is a factual compilation. *G. B. S. 90* (Dodd, Mead), edited by S. Winsten, is a collection of numerous essays on every side of Shaw, his philosophy and his work.

In concluding, one should call attention to the difficulty in distinguishing who are definitely American authors and American subjects, a condition increasing largely because of refugees whose stay here has become more or less permanent.

TRAVEL

By McFall Kerbey

Chief, Research Division, National Geographic Society

GENERAL

Publication of travel books took a step forward in 1946 after the meager output of the war years. Most of them were built on observations of several years past. There were still deterrents such as continuing disruption of travel facilities and, on the production side, shortage of paper.

The book of widest scope was *Great Adventures and Explorations* (Dial Press) edited by Vilhjalmur Stefansson, one of the most comprehensive summaries that has been published in a single volume of the long story of "how man came to know his world." Told in large part in the words of the chief discoverers themselves, it covers world-wide explorations from the time of Pytheas (330 B.C.) to the present. Spanning two continents, *Pacific Crest Trails* (Superior Pub.

Co.) by Joseph T. Hazard deals with the trails and highways and recreational areas in the Pacific coast highlands from central Alaska to Cape Horn.

CANADA

Aspects of many-sided Canada, the mountains of British Columbia, the mining towns of Ontario and the Dominion's chief city, are presented in four books. *Driftwood Valley* (Little, Brown) by Theodora C. Stanwell-Fletcher is the story, written with sensitiveness and insight, of the stay of two naturalists, husband and wife, in an almost untouched wilderness area in north central British Columbia, while they studied and recorded the ways of birds and beasts as season followed season. The volume is enriched with excellent charcoal sketches by John F. Stanwell-Fletcher and includes also complete lists of the plants and animals of the region. Nearer the U. S.-Canada border J. Monroe Thorington in *The Purcell Range of British Columbia* (American Alpine Club) sketches the topography and history of this mountain group which gives birth to the Columbia River, and relates his own mountaineering experiences. The timber, fertile soil, hydroelectric power, and mineral wealth of Northern Ontario—"an almost unknown country within a day's journey of our richest city"—is described by O. T. G. Williamson in *The Northland* (Ryerson Press). The combined charm of Montreal's setting on the slopes of its island mount, and its atmosphere, half-French half-British, is brought out in *The Lure of Montreal* by W. P. Percival.

EASTERN UNITED STATES

The diversity of scenery, industry, architecture, and ways of life throughout the United States are shown in *Look at America* (Houghton Mifflin) by the editors of *Look Magazine*, a collection of striking photographs, a few in color. *Cruising to Florida* (McGraw-Hill) by Morley Cooper recounts the adventures and misadventures of the author and his wife during a leisurely three-months' journey in a cabin cruiser along the canals, rivers, sounds, and lakes that make up the Intracoastal Waterway from the Delaware River to southern Florida.

An addition in the East to the American Lakes Series is *Lake Champlain and Lake George* (Bobbs-Merrill). Frederic F. Van De Water traces the history of the two bodies of water from glacial times, through their turbulent frontier days, to the serene present when they are "museum-piece lakes" sought by vacationists. *The Housatonic, Puritan River* (Rinehart) by Chard Powers Smith is one of the Rivers of America Series. It is the story of a 115-mile valley through Massachusetts and Connecticut whose people, for 300 years, have struggled successfully against cupidity, inflowing wealth, worldliness, and over-industrialization. In *A Pilgrim Returns to Cape Cod* (Yankee Pub. Co.), Edward Rowe Snow tells of a seven-weeks' hiking tour around the Cape in the spring of 1946, spicing his narrative with anecdotes and bits of history. Katharine Crosby, in *Blue-Water Men and Other Cape Codders* (Macmillan), reports on Cape Cod's "people, present and past, and their houses and their ships and their way of life."

THE SOUTH

The Tennessee River of pre-Civil War days, in whose valley Indians, white traders, and settlers from the Atlantic States made early American history, is the theme of Donald Davidson's *The Tennessee* (Rinehart). This is another of the Rivers of America Series, the first of two volumes. *Lower Piedmont Country* (Duell, Sloan & Pearce), a volume in the American Folkways Series, by H. C. Nixon, is the story of the people of the hill country of Tennessee, Alabama, and Georgia and of their problems and patterns of life. *Charleston* (Corinthian Pubs.) is a collection of 74 full-page photographic studies by F. S. Lincoln showing the charm of the city's many structures of early American design. In *Wild Acres* (Dutton), the naturalist-author, Henry Hazlitt Kopman, introduces the reader to the strange, alluring flat country of the Louisiana-Mississippi Gulf Coast, a land of swamps, savannas, and "mudlump" islands, largely uninhabited save for varied and abundant bird life. The informal descriptions range over many species of migratory and resident birds that frequent the region through the seasons. New Orleans' backdoor waterway and yachting area, Lake Pontchartrain, is the subject of a book of that name (Bobbs-Merrill) by W. Adolphe Roberts. Another of the American Lake Series, the volume traces the history of the lake—really a lagoon—from the settlement of New Orleans in 1718 to the days of Huey Long.

MIDDLE WEST AND WEST

Midwest at Noon (U. of Chicago Press) by Graham Hutton is a study of the area, climate, people, customs, economics, and politics of "a leading industrial and agricultural region of the globe." In *San Antonio: City in the Sun* (McGraw-Hill) Green Peyton Wertenbaker paints an intriguing picture of what he calls "The crossroads of North America," a single community in which he finds all the diverse elements of Texas as well as influences from the South, the West, and Mexico. *Trail Dust and Saddle Leather* (Scribner) by Jo Mora is a fascinating history of the American cow country and its cattle industry, a biography of the cowboy, and a description of his tools from saddle, and bridle and lariat to branding iron and chuck wagon. Frank Waters' *The Colorado* (Rinehart), one of the Rivers of America Series, deals with the mighty river itself, its vast basin of mountains and deserts, its course through some of the world's greatest canyons, its people, and its future. *Listen, Bright Angel* (Duell, Sloan & Pearce) by Edwin Corle, is a story of the Grand Canyon told through its influence on people who have been associated with it during the four centuries since its discovery. The biography of the Gila River of southern Arizona is recorded in *River of the Sun* (U. of New Mex. Press) by Ross Calvin. From its source in 10,000-foot mountains in New Mexico, through ranching country and desert to its confluence with the Colorado, the river flows through the sunniest region in the United States; hence the book's title. It traverses as well, the author shows, a land of high adventure beginning with Coronado in 1540.

George Palmer Putnam in *Death Valley and Its Country* (Duell, Sloan & Pearce) writes of a unique winter resort region, "the lowest, driest, and hottest spot in America." He notes its geology and geography, traces the history of the ghost towns that encircle it, and brings to life the odd assortment of characters that has trod its salt flats since the Forty-niners gave its ill-omened name to the world. *My San Francisco* (Bobbs-Merrill), by Gertrude Atherton, is a chronicle of the legends of San Francisco's beginnings along with Mrs. Atherton's own warm memories of the town's middle age, and her keen observations on the great port-city of the present. Carey McWilliams' *Southern California Country* is an unconventional but informative study of the social, economic, and geographic factors that have made the southern Californians what they are today. *The Pacific Coast Ranges* (Vanguard Press), edited by Roderick Peattie, is a new volume in the American Mountain Series, with a collection of essays by ten specialists. The book presents a comprehensive story of the uplands that stretch from Puget Sound to the Mexican border, and the people who dwell there.

BERMUDA AND LATIN AMERICA

Bermuda Journey (Coward-McCann) by William Zuill is a leisurely guidebook to the islands, lightened by frequent excursions into history. Various aspects of Cuba, Havana and "the interior" (which includes the rest of the island), life among sophisticated islanders and among humble field workers, and the importance of cooperative societies, are described by Erna Fergusson in *Cuba* (Knopf).

Ivan Bullot's *Air Travel Guide to Latin America* (Franklin Watts) is one of the recent handbooks tailored to fit the needs of the traveler by air to the countries south of the Mexican border. *Mexico South* (Knopf) by the Mexican artist Miguel Covarrubias, is the story of the little known Isthmus of Tehuantepec and its people, present and past, with special reference to the rich art, ethnology, and folklore of the region and to the important archeological finds of recent years at Monte Alban, La Venta, Tres Zapotes, and other sites. It is appropriately illustrated with sketches and paintings by the author in addition to photographs. How the charms of Mexico in desert and jungle, among city people and village folk, cast their spell over her in four years of wandering is told by Neill James in *Dust on My Heart* (Scribner). *Mexican Heritage* (Augustin) is a group of photographs by Hoyningen-Huene which presents the "fact of Mexico in all her moods." *The Land and People of Brazil* (Lippincott) by Rose Brown combines general statistics of Brazil with detailed descriptions of the country's best developed and most heavily populated region—the coastal states and their leading cities. The book is one of the Portraits of the Nations Series.

BRITISH ISLES AND THE FAROES

Of books devoted to interpreting England alike to Englishmen and others of the English-speaking world, two seem worthy of special mention. One is *The Land of the English People* (Lippincott) by Alicia Street, another of the series, Portraits of the Nations. In it the author portrays with sympathy the way of life of the English in a setting which she shows to be pleasant and charming despite the island's heavy population. The second is *The Englishman's Country* (Collins) edited by W. J. Turner consisting of a series of essays on England's villages, country houses, cities and small towns, ports and harbors, gardens and inns. One of the few books of the year about Ireland is *In the Kingdom of Kerry* (Dundalgan Press) by Richard Hayward, a personal record of the author's somewhat desultory wanderings through the present County of Kerry. Another is *Stranger in Aran* (Cuala Press) by Elizabeth Rivers which records a spring and mid-winter visit of the author to the bleak islands off the west coast of Ireland. The stark, sea-lashed Faroe Islands, north of Scotland, and the activities of their rugged people are described in brief text and vivid photographs in *The Faroes in Pictures* (Allen and Unwin) by Gordon Huson.

EUROPE AND THE SOVIET UNION

Lost Treasures of Europe (Pantheon Books), edited by Henry La Farge, consists of 475 camera studies of famous buildings, monuments, portions of cities, and works of art that were destroyed by the bombs and shells and flames of war. *A Guide to the Soviet Union* (Dial Press) by William M. Mandel is a comprehensive study of the development of the U. S. S. R., its governmental and economic organization, and the cultural forces at work. An overall picture of the many diverse groups of the country is given in *The Peoples of the Soviet Union* (Harcourt, Brace) by Corliss Lamont, which also shows the striking contrast in their treatment under the Tsarist and Soviet regimes. *Russia on the Way* (Macmillan) by Harrison Salisbury is a narrative of the author's observations during an eight-month's tour of duty as a correspondent in Moscow and on a journey with Eric Johnston into Siberia and the Southeast. *Soviet Asia Mission* (Reynald & Hitchcock) by Henry A. Wallace is an account of the author's seven-weeks' trip by air to Soviet Asia and China, in the spring of 1944. The greater part of the book is devoted to Siberia and its developing industry and agriculture.

AFRICA

From the lips of ordinary folk—a guide, merchants, housewives, artisans, date-growers, a bedouin, a barber, dock-workers—Guido Rosa presents in *North Africa Speaks* (Day) a cross section of the drama of everyday life in the difficult environment of Algeria and Morocco. In *Grown-up Liberia,* Francis Mitchell tells a fragmentary story of his travels in Liberia and his disappointment at the working of an African government patterned after that of the United States. *In the Forests of the Night* (Barries) by James Riddell is the story of the adventures of two Englishmen armed only with cameras, who obtained remarkable photographs of wild animals in the Belgian Congo.

NEAR EAST AND INDIA

Syria (Hale, Ltd.) by Robbin Fedden reveals that key land of the Levant through glimpses of its outstanding geographic features—the fertile Phoenician coast, the rich oasis capital of Damascus, steppes, desert, the Euphrates—all with a background of the country's long history and its noteworthy archeological remains. A different approach to Syria is furnished by Agatha Christie Mallowan. Accompanying her archeologist husband on a scientific expedition, she writes entertainingly of her experiences in *Come Tell Me How You Live* (Dodd, Mead). *Baalbek, Palmyra* (Augustin) consists of two collections of excellent photographs by Hoyningen-Huene of the ruins of magnificent temples and gigantic building stones of Baalbek, and of the remains of the tombs and temples of the caravan center, Palmyra. A history of the two cities by David M. Robinson completes the book. "The earth's most storied river" is traced by Nelson Glueck in *The River Jordan* (Westminster Press) as it winds through its great trench largely below sea level, past ruined settlements of ancient, Biblical, and Roman times, to the Dead Sea. Much farther east Elva Babcock Gardner, an American mission school teacher, contributes *Lure of India* (Pacific Press), a series of word sketches of the Indian scene with its beauty and ugliness, its extremes of wealth and squalor.

FAR EAST

Three books on China and one on Japan seek to explain those little understood Oriental lands to readers in the West. *China: Her Life and Her People* (U. of London Press), by Mildred Cable and Francesca French, presents both sweeping and detailed views of the sprawling land, its villages and towns, its customs, industries, and arts. Vaughan White in *Our Neighbors, the Chinese* (Rinehart) undertakes to clear up the Westerner's confused picture of China and to capture the reality of the common people in the background. *China Cycle* (Macmillan, Ltd.) by Richard P. Dobson tells vividly of the author's adventures and observations while traveling through the southern provinces. With a knowledge gained from many years of familiarity with the Japan of city and country, Willard Price, in *Key to Japan* (Day) analyzes for Americans the unpredictable psychology of the Japanese people, their double-meaning language, and some of their moral sore spots, as well as their keen intelligence and sensitiveness.

PACIFIC AREA

The strange fascinating temple music of Bali weaves in and out of the story of the village life of the islanders told by Colin McPhee, a young American composer in *A House in Bali* (Day). In *Let's Go to Australia* (Conjure House) George F. Taubeneck provides a needed book on the earth's loneliest continent. It is lonely only geographically, the reader finds from the author's comprehensive survey of its virile individualistic people, their experiments in government, their great cities, their cattle and sheep stations, and their promising future. Although primarily a study of New Zealand's socialized institutions and their development, *New Zealand: Pacific Pioneer* (Macmillan) by Philip L. Soljak includes chapters relating to the geography of "this youngest of nations" and the current activities of its people. A more comprehensive treatment, yet in informal style, is provided by *Introduction to New Zealand,* a government publication prepared by the Department of Internal Affairs of the

Dominion. After describing the geography of the country, the book deals with its history, government, economics and statistics, its plant and animal life, and the cultural atmosphere of its people. In *Where the People Sing: Green Land of the Maoris* (Knopf), John Lee Zimmerman, a U. S. Marine Captain, tells with understanding of the able natives who have adopted many modern ways yet preserve the best of their tribal heritage. That the changes in Tahiti, deplored by some writers, are superficial and that the charm of its people is as marked now as in the past is the theme convincingly developed by William S. Stone in *Tahiti Landfall* (Morrow).

BELLES LETTRES

By May Lamberton Becker

Reader's Guide, *New York Herald Tribune*

FOLKLORE AND OTHER THEMES

Robert P. Tristram Coffin's *People Behave Like Ballads* brought out the people and folklore of New England. The travels of Kenneth Porter, a native of Kansas, in Mexico and the British Isles, resulted in *No Rain From These Clouds;* this included folk-ballads of the Seminole Indians. Norman Rosten's *The Big Road,* a narrative poem, extended through the bridgemaking of all the ages to its climax, the Alcan Highway. Alfred Kreymborg's *Man and Shadow,* in the course of a day's wandering in New York's Central Park, dealt in types of human nature.

SOME BRITISH POETS

Among British poets published this year in the United States were V. Sackville-West, whose *The Garden,* a major work, grouped its lyrics around the year's four seasons; Francis Brett Young's *The Island,* a narrative pageant of English history; and *The Bridge,* by Ruth Pitter, poems from 1939 to 1944 of a poet whose career began with winning the Hawthornden Prize and whose following has been steadily strengthening in both countries.

WILLIAMS AND CUMMINGS

The work in progress of William Carlos Williams, a long philosophical study, made a distinguished entrance into print with *Paterson I,* a distinctively different treatment of the theme. E. E. Cummings, in his fantasy *Santa Claus: a Mortality,* caused the Saint and Death to exchange symbols.

CENTENNIAL EDITION OF SIDNEY LANIER

An event of importance in the history of American literature was the publication in ten volumes of the Centennial Edition of Sidney Lanier, an undertaking begun by Duke University but taken over by Johns Hopkins—appropriately, as it was at this university that he lectured and at Baltimore that some of his best poems were written. Another publication of historic importance was the *Last Poems* of Philip Morin Freneau, the first poet of our early republic, edited by Lewis Leary, his biographer.

HISTORY AND DEVELOPMENT OF POETRY

The *History of American Poetry: 1900-1940* by Horace Gregory and Marya Zaturenska, was an important publication of the year, tracing the trends, influences and forms of four decades and taking in significant developments. *The Nature of Poetry,* by Donald A. Stauffer, was a critical examination of its structure, texture, and meaning that extended from Spenser to Yeats. *The Poet in the Theatre,* by Ronald Peacock of Leeds University, surveyed the subject since 1870 with special reference to T. S. Eliot, Henry James, Hebbel, Grillparzer, Ibsen, Shaw, Chekhov, Synge, and Yeats. Mark Schorer, in *William Blake,* offered a new interpretation of the poet in relation to his time and to the troubled state of man's faith. *The Noble Voice,* by Mark Van Doren, appealing to a general audience with the resources both of poet and of critic, revealed the possibilities to the spirit of nine great poets from Homer to Wordsworth, each in a master work. Walter Jackson Bate treated *The Stylistic Development of Keats,* and Trusten W. Russell in *Voltaire, Dryden and Heroic Tragedy,* discussed how the dramatic theory of Voltaire was affected by his knowledge of English tragedy.

DRAMA IN PRINT

Of the year's published plays also appearing on the stage, the most considerable was *The Iceman Cometh,* Eugene O'Neill's first offering after a silence of 13 years. The New York Drama Critic's Circle in April 1946 awarded no prize for the season, but the Pulitzer went to a political comedy, *State of the Union,* by Russell Crouse and Howard Lindsay, whose plot softened its satire by liberal use of stage convention in showing the grooming for a Presidential nomination of an amateur in national politics. Soldiers after and during the late war appeared in several printed plays: *A Sound of Hunting,* by Harry and Peter M. Brown, American soldiers at Cassino; *Home of the Brave,* by Arthur Laurents, a drama of race-prejudice involving a shell-shocked soldier; *Soldier's Wife,* by Rose Franken, a comedy based on readjustment to family life; and *Deep Are the Roots,* by Arnauld D'Usseau and James Gow, disillusioning postwar experiences of a Negro veteran returning to the South and the white family where he had been raised. Irwin Shaw's *The Assassin* was also a war play (Algiers in 1942), but in printed form it attracted less interest than its preface, a long statement of the author's objections to the present state of the American theatre and of the futility of being a playwright in America. The author of *The Glass Menagerie,* Tennessee Williams, published a volume of 11 starkly realistic one-act plays, *27 Wagons Full of Cotton.* Elmer Rice, whose famous *Street Scene* took shape during the year as a "musical," published a fantastic comedy *Dream Girl,* S. N. Behrman a triangle play *Dunnigan's Daughter,* and Garson Kanin a farce comedy *Born Yesterday,* all of which were successful in production.

George Jean Nathan's *Theatre Book of the Year 1945-1946,* much more than a year-book, provided both record and evaluation of the season on Broadway: John Mason Brown, until recently a newspaper critic of the drama, now a literary editor, and always one who loves the stage with reservations, produced a running commentary on our theater and other matters in *Seeing Things.* Eric Bentley's *The Playwright as Thinker,* a study of the drama since Ibsen and Shaw, included them both with Strindberg, Wilde, Pirandello, Cocteau, Sartre, and Eugene O'Neill. *Drama and Theatre Illustrated by Seven Modern Plays,* edited by A. R. Fulton, was one of the most interesting of an uncommonly large number of play collections: these seven plays ranged from Pinero to Noel Coward.

ESSAYS

The informal essay, capable as it is of almost infinite variety, flourished this year in various forms. E. B. White's incisive comments on contemporary affairs, in *The Wild Flag,* included politics and statecraft. The "incomparable Max" Beerbohm added another volume to the canon for his following on both sides of the ocean, a chronological series of broadcasts and articles, *Mainly on the Air.* Thomas Hornsby Ferril sent out from Colorado *I Hate Thursday,* first published in *The Rocky Mountain Herald,* Denver's oldest weekly. *An American Year,* by Harold G. Borland, is a sequence of nature studies. *The Natural History of Nonsense,* by Bergen Evans, attacks with lively humor every sort of superstition and delusion concerned with matters basic, such as race psychology, sex, religion, and hygiene. The essays in *The Clock of History*, by Alvin Johnson, founder of the University in Exile and one of the foremost exponents of liberal democracy, arise from the trend of events during the last 14 years. *The World Today*, a collection of speeches and articles, extended through the rich career of Nicholas Murray Butler, president emeritus of Columbia University.

CRITICISM

The Basis of Criticism in the Arts, a study of aesthetics by Stephen Coburn Pepper, deals with mechanistic, contextualistic, organistic, and formistic methods of criticism. *Preface to an American Philosophy of Art*, by Amos Philip McMahon, is a review of the Western tradition of art philosophy. Harley Granville Barker's *Prefaces to Shakespeare* included five critical essays on stagecraft and playwriting. *The Craft of Comedy*, in the form of letters exchanged between the celebrated actress Athene Seyler and the critic Stephen Haggard, discussed ideas of technique. *Victorian Album*, by Luch Poate Stebbins, surveyed the place of literature of women writers of the period, including Charlotte Brontë, George Eliot, Mrs. Gaskell, and Margaret Oliphant. Two brilliant and popular British reviewers offered collections of opinion: Cyril Connolly's *The Condemned Playground* and George Orwell's *Dickens, Dali and Others*.

ENGLISH LANGUAGE AND LITERATURE

By Donald Nelson Koster
Assistant Professor, Adelphi College

GENERAL

In the first full post-war year American publishers continued to be faced with most of the problems that had confronted them throughout the period of hostilities. The result was that many new books originally intended for publication in 1946 had to be put off until 1947. Nevertheless, the number of new books printed in 1946 was large, and it may be fairly said that publishers, on the whole, met the demands upon them even more successfully than had been anticipated.

Limitations of space make this survey necessarily selective, many brief or highly technical items being omitted. Readers are advised to consult the Supplement to the *Publications of the Modern Language Association (PMLA)*, which contains a thorough bibliography.*

ENGLISH LANGUAGE

Dialect.—Robert Shafer in "The Language of West Coast Culinary Workers" (*AS*) provided a list of terms in current use among kitchen and restaurant employees in the San Francisco Bay region. Slang words prevalent among the students at the Agricultural and Mechanical College of Texas were listed by Fred Eikel, Jr., in "An Aggie Vocabulary of Slang" (*AS*), while Jesse W. Harris studied "The Dialect of Appalachia in Southern Illinois" (*AS*). Gordon W. Hewes in "American Japanese Place Names" (*AS*) discussed the names by which Japanese-speaking residents of the United States have designated certain cities, towns, states, and natural features of the country.

Words and Terms.—Allen Walker Read's "The Word Harvest of '45"

---

* Periodicals are cited under the following abbreviations: *PMLA*, *Publications of the Modern Language Association of America; MP, Modern Philology; JEGP, Journal of English and Germanic Philology; SP, Studies in Philology; PQ, Philological Quarterly; ELH, English Literary History; HLQ, Huntington Library Quarterly; SAB, Shakspere Association Bulletin; MLQ, Modern Language Quarterly; JHI, Journal of the History of Ideas; ASch, The American Scholar; KR, The Kenyon Review; YR, The Yale Review; CE, College English; AS, American Speech; AL, American Literature; SRL, The Saturday Review of Literature.*

(*SRL*) was an attempt to present the new words that entered the language in 1945, and Henry F. Woods's *American Sayings* (Essential Books) explains the origin and occasion of nearly 300 popular phrases dating from before the Revolutionary War to the present. "Thoughts on 'Yep' and 'Nope'" (*AS*) by Dwight L. Bolinger leads to a discussion of the relevance of gesture to language, and Leo Spitzer's "The Gentiles" (*JEGP*) is an examination of the use of the word in America. Steven T. Byington in "Mr. Byington's Brief Case (IV)" (*AS*) commented on Whittier's rhymes, words from Cooper's works, words from Samuel Hopkins Adams's *Canal Town,* on some railroad terms, on "sugar tree," and on other expressions, while the indefatigable H. L. Mencken in "Bulletin on 'Hon.'" (*AS*) made some interesting remarks on the present status of that honorable abbreviation.

Etymology.—Charlton Laird in "Etymology, Anglo-Saxon, and Noah Webster" (*AS*) examined the great lexicographer's study of Anglo-Saxon and concluded that he was at best a mediocre student although he appreciated its importance for the study of English. "*Res et Verba:* Words and Things" (*ELH*) by A. C. Howell traces through the seventeenth century the use of this combination of words and the idea represented by it. A classical origin is revealed; it was from their study of classical rhetoric that seventeenth century critics learned of it. Leo Spitzer's "Burglar" (*JEGP*) is a commentary upon the origins of the word, with a conclusion that it points to a need for closer collaboration between English etymologists and French lexicographers. Charles H. Livingston in "American English 'Flunk'" (*AS*) expressed his belief that the term is a variation of *funk,* to be traced to Old French *funicle.* Its first use as an American academic slang term seems to have been in a text printed at the beginning of the ninteenth century.

Pronunciation.—In "Notes on the Pronunciation of 'Hurry'" (*AS*), C. K. Thomas supplied data on the two main American pronunciations of the word, while Brobury Pearce Ellis in "Standards in American Speech" (*SRL*) suggested the creation of a research laboratory to deal with the problems of our spoken language, this laboratory to be supported by broadcasting companies and by the publishers of dictionaries. W. Cabell Greet, writing in *Harpers Magazine,* urged British motion picture producers to make some effort to adjust the speech of their actors so that Americans may understand what is being said in English movies.

Usage. — Two stimulating books were published in this connection in 1946: *The Art of Plain Talk* (Harpers) by Rudolf Flesch and *Signs, Language and Behavior* (Prentice-Hall) by Charles Morris. Dr. Flesch's volume is a rewriting of his Ph.D. dissertation, *Marks of Readable Style,* and offers a formula for measuring the readability of writing. Professor Morris' book is the result of the University of Chicago philosopher's 20 years of work in collecting and coordinating the major developments in the field of communication; an invaluable tool for the specialist in semantics, it includes an excellent bibliography. Ivor Brown's "The Pudderers" (*SRL*) commented on the jargon of the learned or of those pretending to rare wisdom, and George Arms' "Cliches, Extended and Otherwise" (*SRL*) provided an analysis of various types of hackneyed phrasing.

Dictionaries.—Among the new dictionaries were *Air Words* (Superior) edited by Fred Hamann, a brief dictionary of the language fliers speak, and *Dictionary of Word Origins* (Philosophical Library) by Joseph T. Shipley, a book dealing with the etymological overtones of words. "Quotations Augmenting the *Dictionary of American English*" (*AS*) by Charles J. Lovell was a random selection from the author's file of 5,000 quotations of Americanisms antedating the material in the *DAE.*

OLD ENGLISH

The view was advanced by Marie Padgett Hamilton in "The Religious

Principle in *Beowulf"* (*PMLA*) that "the theory of grace, alongside the doctrine of Providence, conditioned the poet's view of the past and influenced his interpretation of events and agents in his stories." Kemp Malone, in "Variation in *Widsith"* (*JEGP*), studied the technic of variation in the poem. Erika von Erhardt-Siebold presented solutions to two Old English riddles. In "Old English Riddle No. 4" (*PMLA*), she suggested "hand-mill" as the solution, and in "Old English Riddle No. 39" (*PMLA*), she gave "Hypostasis Death" as the answer to a riddle that has long puzzled scholars of Anglo-Saxon.

MIDDLE ENGLISH AND CHAUCER

A contribution of first importance came from the pen of the noted English scholar E. K. Chambers in *English Literature at the Close of the Middle Ages* (Oxford). W. H. French in "Dialects and Forms in Three Romances" (*JEGP*), studied *Arthour and Merlin, King Alisaunder,* and *Richard Coeur de Lion* as examples of the Midland dialect, while James R. Hulbert in "A Thirteenth-Century English Literary Standard" (*JEGP*) concluded that Versions A and B of the *Ancren Riwle* perhaps were written in a standard language rather than in the dialect of the original.

Considerable Chaucerian scholarship was published in 1946, the work of largest proportions being Marchette Chute's biography, *Geoffrey Chaucer of England* (Dutton). The first really adequate treatment of Chaucer's life, the book was made possible by a half century of research in the archives. Germaine Dempster, in "Manly's Conception of the Early History of the *Canterbury Tales"* (*PMLA*), presents John M. Manly's view of the history of the *Canterbury Tales* to about 1500, indicating in so far as possible the basis for his opinions. Kemp Malone's "Style and Structure in the Prologue to the *Canterbury Tales"* (*ELH*) attempts to show some of the features of the Prologue that make it, in Thomas Wright's words, "one of the most perfect compositions in the English language." Margaret Schlauch in "The Marital Dilemma in the *Wife of Bath's Tale"* (*PMLA*) traces the history of the dilemma of Chaucer's hero in having to choose whether his wife shall be beautiful but of doubtful chastity or ugly and of assured fidelity.

"Chaucer's Originality in the *Nun's Priest's Tale"* (*SP*) by J. Burke Severs reveals that Chaucer did not permit his sources to tyrannize over him but intensified the effect of the tale by the changes he made. In "Chaucer Borrowing from Himself" (*MLQ*), Robert A. Pratt presents two examples of Chaucer's borrowing from his own work: the "Invocations to the Virgin" in the *Second Nun's Prologue* and the *Prioress's Prologue,* and the "Invocations to Venus" in *The House of Fame* and the *Parliament of Fowls.* Paull F. Baum's "Chaucer's Metrical Prose" (*JEGP*), a study of *Melibeus,* reveals that many of Chaucer's prose lines skan so as to form a complete metrical line. Marshall W. Stearns in "A Note on Chaucer's Use of Aristotelian Psychology" (*SP*) contends that Chaucer made frequent use of such psychology, the key words "impress" or "impression" being usually present. A claim that Henry IV honored Chaucer, with whom he was connected by marriage, for his distinguished services to the State by burial in Westminster Abbey is put forth by E. P. Kuhl in "Chaucer and Westminster Abbey" (*JEGP*).

EARLY TUDOR

The possibility of Udall's intending satire upon the Roman rites for the dying and dead is explored by Edwin Shepard Miller in "Roister Doister's 'Funeralls'" (*SP*), while Margaret Church's "The First English Pattern Poems" (*PMLA*) discusses the influence of the *Greek Anthology* on sixteenth century English pattern poetry. Hallett Smith, in "English Metrical Psalms in the Sixteenth Century and their Literary Significance" (*HLQ*), suggests that the various translations of the Book of Psalms in the sixteenth century had a marked influence upon the development of Elizabethan poetry. The same author in "The Art of Sir Thomas Wyatt" (*HLQ*) portrays Wyatt as an artist whose object was not to display himself but to make poems, and one who contributed a directness, energy, and humor unusual among English poets from Surrey to Spenser. In "Renaissance Exploitation of Cavendish's *Life of Wolsey*" (*SP*), Paul L. Wiley shows that George Cavendish's biography had a considerable influence upon Renaissance thought and literature.

AGE OF ELIZABETH

The Queen's own interesting efforts at translation are examined by Geoffrey B. Riddehough in "Queen Elizabeth's Translation of Boethius' *De Consolatione Philosophiae*" (*JEGP*). James Sledd in "Baret's *Alvearie*, an Elizabethan Reference Book" (*SP*). studies the old dictionary as representative of the common knowledge and opinion of the time. "The Allegory of the 'Beare' and the 'Foxe' in Nashe's *Pierce Penilesse*" (*PMLA*). by Donald J. McGinn, is an examination of Thomas Nashe's political indiscretion in introducing the extended fable of the Bear and the Fox into his very popular pamphlet. Helen E. Sandisen in "The Vanytypes of Sir Arthur Gorges Youthe" (*PMLA*) makes a preliminary report on Egerton MS. 3165, the "lost poems" of Sir Arthur Gorges found shortly before its purchase by the British Museum in 1940. In "On Reading John Ford" (*SAB*), John Wilcox examines the attitudes of Ford's British readers throughout the Victorian era and shows the docility of Americans of this century in accepting the verdicts of their "betters." Freda L. Townsend's "Sidney and Ariosto" (*PMLA*), provides evidence to indicate the influence of Ariosto's *Orlando Furioso* upon Sidney's *Arcadia*.

Two Chapman items were provided by Mark Eccles and Johnstone Parr, the former providing in "Chapman's Early Years" (*SP*) new biographical data on the Elizabethan period of the poet's life, and the latter in "The Duke of Byron's Malignant 'Caput Algol'" (*SP*), disagreeing with T. M. Parrott that the Duke in Chapman's play meets his tragic end through his own overweening pride, ambition, and conceit. Parr contends that it was rather the Duke's malignant natal horoscope that Chapman blamed.

MARLOWE

Two new books on Marlowe made their appearance in 1946, one scholarly, the other popular in tone. Paul H. Kocher's *Christopher Marlowe* (North Carolina) is a painstaking study of Marlowe's thought, learning, and character which digs beneath his lines in order to determine their foundation in his ideas and opinions. Charles Norman's *The Muses' Darling* (Rinehart) is an imaginative biography which makes for pleasant reading. A third Marlowe item is Leo Kirschbaum's "Some Light on *The Jew of Malta*" (*MLQ*), which contends that the text as we have it is substantially as the dramatist left it.

JONSON AND OTHERS

Ernest William Talbert in "The Interpretation of Jonson's Courtly Spectacles" (*PMLA*) suggests that, if Jonson's court entertainments are to be interpreted in accordance with his own words, the critic should examine carefully the voice and sense of each masque. Also dealing with Jonson was Edgar Hill Duncan's article, "Jonson's *Alchemist* and the Literature of Alchemy" (*PMLA*), which presents annotations of the most important speeches in the alchemical episodes of the play and provides further evidence of the dramatist's remarkable knowledge of alchemy. *Edmund Campion* (Little, Brown) by Evelyn Waugh is the new American edition of the study by the eminent English novelist first published in England eleven years ago. Arnold Stein in "Donne's Obscurity and the Elizabethan Tradition" (*ELH*) examines Donne's poetry and reveals the mechanical aspects of his obscurity against the backgrounds of the broad

Elizabethan tradition and the general tendency toward obscurity evident as the sixteenth century drew to a close.

SPENSER

Charles E. Mounts in "Virtuous Duplicity in *The Faerie Queene*" (*MLQ*) observes a disposition to employ deception in a good cause among Spenser's most virtuous characters throughout *The Faerie Queene,* and Louis S. Friedland in "Alexander C. Judson's *Life of Spenser*" (*SAB*) compares the new biography with R. W. Church's older one and finds little real progress made. Louise C. Turner Forest's "A Caveat for Critics Against Invoking Elizabethan Psychology" (*PMLA*) inveighs against the "substituting of learned case histories for interpretative and analytical dramatic criticism."

SHAKESPEARE

Samuel A. and Dorothy R. Tannenbaum compiled a valuable "Bibliography of Shaksperiana for 1945" (*SAB*). John Henry de Groot's *The Shakespeares and "The Old Faith"* (King's Crown) is concerned chiefly with the religious background of William Shakespeare and the religious references in his plays. Two other books provided arrangements of the play texts for the modern reader: Babette Deutsch's *The Reader's Shakespeare* (Julian Messner) in which the plays are extensively abridged and paraphrased, and *Shakespeare Arranged for Modern Reading* (Doubleday) edited by Frank W. Cady and Van H. Cartmell, which is designed to present Shakespeare's plays in shortened form to the reader who wants to sample the best of the Bard. The story of each play is related scene by scene, with the celebrated lines retained as Shakespeare wrote them. The omitted passages have been summarized.

Shakespeare articles are numerous. Robert Adger Law, in "Shakespeare and American Scholarship" (*20th Century English*), made a brief and incomplete survey of what American scholars have done in this field, while William S. Knickerbocker's "Shakespeare," which appeared in the same volume, was a re-evaluation of Shakespeare as poet and dramatist. W. Stanley Hoole's "Shakspere on the Ante-Bellum Charleston Stage" (*SAB*) listed Shakespearian performances in the Southern city before the Civil War. Walter Wadepuhl in "Heine and Shakspere" (*SAB*) examined the German poet's knowledge of the Elizabethan dramatist and its influence upon him, while Thomas H. McNeal in "*Henry IV,* Parts I and II, and Speght's First Edition of *Geoffrey Chaucer*" (*SAB*) attempted to clarify Shakespeare's sources for and use of the Chaucer material that is evident.

The year 1946 was productive of the usual controversy between Shakespearian scholars. E. E. Stoll's "An Othello All-Too-Modern" (*ELH*) replies to Leo Kirschbaum's "Modern Othello" (*ELH,* July 1944), taking issue with what Stoll considers to be Kirschbaum's misinterpretations of the play. Perry D. Westbrook, in "A Note on *Macbeth,* Act II, Scene 1" (*CE*), contends that Banquo handed his sword and dagger to Fleance because he was afraid that if he kept them he would use them on the King, and Olive Henneberger in "Banquo, Loyal Subject" (*CE*) offers a refutation of Westbrook's viewpoint, feeling that "it is unwarrantable to conclude that Shakespeare conceived of Banquo as other than an uncompromisingly loyal subject and worthy progenitor of a long line of English Kings!"

There were three articles on *Hamlet.* James Feibleman's "The Theory of *Hamlet*" (*JHI*) finds the objective and subjective schools of criticism wanting and attempts to develop a "realistic interpretation of *Hamlet,* using realism in the philosophical sense." Feibleman finds Hamlet to be a perfectionist who can not accept anything less than his ideal order of things. In "Hamlet and Fortinbras" (*PMLA*), William W. Lawrence examines the structure of the play and expresses reasons for the scenes in which Fortinbras appears. George

L. Barnett's "Hamlet's Soliloquy" (*MLQ*) suggests that a certain similarity of phrasing and of thought between the "To be or not to be" speech and lines from *Belvedere,* compiled in 1600 by John Bodenham, indicates that Shakespeare had newly read the book and was influenced by it.

In "King Lear and the Merlin Tradition" (*MLQ*), Roland M. Smith maintains that Shakespeare drew for the madness scenes upon materials which were available in London before he wrote his tragedy, especially upon works dealing with King Arthur and the marvels of Merlin. "*Measure for Measure* and Christian Doctrine of the Atonement" (*PMLA*), by Roy W. Battenhouse, advances the theory that Shakespeare formed *Measure for Measure* after the pattern of the Christian doctrine of the Atonement.

SEVENTEENTH CENTURY

Wendell Clausen's "The Beginnings of English Character-Writing in the Early Seventeenth Century" (*PQ*) reveals a close correspondence between the comedy of manners and character-writing, as exemplified in Jonson and Overbury. William Peery contends that "The Influence of Ben Jonson on Nathan Field" (*SP*) has been much exaggerated. Treating Thomas Heywood, Allan Holaday in "Heywood's *Troia Britannica* and the *Ages*" (*JEGP*) concludes that, however uncertain the history of their composition may be, the *Ages* are dramatizations of much more than *Troia Britannica,* while Freda L Townsend, in "The Artistry of Thomas Heywood's Double Plots" (*PQ*), holds that "Heywood's dramatic career takes on new and richer meaning if we regard him, not as blown about by the winds of fashion and public favor, but as in search of dramatic patterns which would hold the variety so dear to him."

Charles E. Ward, in "*The Tempest:* A Restoration Opera Problem" (*ELH*), records dissent from the theory that Thomas Shadwell wrote an opera on *The Tempest* and concludes that Thomas Betterton was the more likely author. John Harrington Smith's "Thomas Corneille to Betterton to Congreve" (*JEGP*) traces the influence of *Le Baron d'Albikrac* upon Betterton's *The Amorous Widow,* which in turn influenced *The Way of the World.* In "The Citizens in *Philaster:* Their Function and Significance" (*SP*), Mary Grace Muse Adkins analyzes the play as important in showing the direction of the political winds in early seventeenth century England, while J. Max Patrick writes on the anonymous "*The Free State of Noland,* A Neglected Utopia from the Age of Queen Anne" (*PQ*).

A summary of some of the information contained in the unpublished collection of Smock Alley prologues and epilogues in the possession of Harvard University was made by William Van Lennep in "The Smock Alley Players of Dublin" (*ELH*). That the recent discovery of John Wilson's musical setting for Lovelace's ode *The Rose* reveals several variants of the text not apparent in the printed version, was pointed out by Willa McClung Evans in "*The Rose:* A Song by Wilson and Lovelace" (*MLQ*). G. H. Healey edited *The Meditations of Daniel Defoe* (Cummington Press), the first publication of a small sheaf of verses long lost but now in the possession of the Huntington Library, while Francis Christensen, in "John Wilkins and the Royal Society's Reform of Prose Style" (*MLQ*), surveyed a body of evidence pointing to Wilkins as being primarily responsible for Sprat's *History of the Royal Society* and for the famous committee for improving the English language.

DRYDEN

Two books on Dryden were published in 1946: Thursten Wheeler Russell's *Voltaire, Dryden and Heroic Tragedy* (Columbia), in which the literary relationship of the two writers is explored with care, and Mark Van Doren's *John Dryden, A Study of His Poetry* (Holt), a new printing of a volume which first appeared in 1921 and has been out of print in this country for many years. The Van Doren book contains a revised and enlarged index and has been completely and attractively reset. Other Dryden items include "Dryden's *Georgics* and English Predecessors" (*HLQ*) by Helene Maxwell Hooker, a careful examination of Dryden's translation of Virgil's *Georgics* in which light is thrown on his indebtedness to his English predecessors, particularly Lauderdale and May, from whom he borrowed extensively, and "The Occasion of *An Essay of Dramatic Poesy*" (*MP*) by George Williamson, which explains the delay in publication of the *Essay* and expresses the belief that Dryden had a dual purpose in writing it: to explore and define his own theories of dramatic art and to reply to Sorbière.

MILTON

The year was productive of much Miltonic scholarship. Two books appeared, Davis P. Harding's *Milton and the Renaissance Ovid* (Illinois) and James Holly Hanford's *A Milton Handbook* (Crofts), a fourth edition of a standard work, to which has been added a valuable appendix of 20 pages on the tour Milton made to the Continent in 1638-39. George Coffin Taylor, writing in *20th Century English,* gave in "Why Read Milton Now?" reasons for reading the poet as a force for preventing the "continuation of a crumbling civilization." Donald Lemen Clark, in "Milton's Schoolmasters: Alexander Gil and his Son Alexander" (*HLQ*), gave an account of the men who were Milton's masters at St. Paul's School in London from his tenth to his sixteenth year, and of their publications. Examining Milton's views on marriage and divorce, William Haller, in "Hail Wedded Love" (*ELH*), summed up the poet's reasoning thus: "When it comes about that, in order to save his soul, he who loves must marry and he who is married must love, it follows that, in order to marry and love, a man may have to divorce the woman whom he has discovered to be not in truth part of his soul, his other half." The author points out that Milton's reasoning sprang from an idealistic view of marriage. The relation of Milton's divorce pamphlets to Selden's *De Jure Naturali* and *Uxor Ebraica* was discussed by Eivion Owen in "Milton and Selden on Divorce" (*SP*).

G. F. Sensabaugh contributed "Milton on Learning" (*SP*) in which he established a close relationship between the poet's *De Doctrina Christiana* and his *Paradise* poems, and "Milton in the Revolution Settlement" (*HLQ*), a study of Milton's influence in English political life through his *Pro Populo Adversus Tyrannos,* the anonymously printed adaptation of *The Tenure of Kings and Magistrates.* Leon Howard's "'The Invention' of Milton's 'Great Argument': A Study of the Logic of 'God's Ways to Men'" (*HLQ*) was an analysis of Milton's logic as revealed in his *Artis logicae* and a discussion of its possible relationship to his statement of theme and purpose in *Paradise Lost.*

In "Milton and Thrice Great Hermes" (*JEGP*) William B. Hunter, Jr. attempted to show Milton's relationship to Spenser and to certain Italian Renaissance poets and thinkers, and the relationship of all to the writings of the legendary Thoth, in Milton's words "The Thrice Great Hermes." The same author, in "Milton's Materialistic Life Principle" (*JEGP*), concluded that Milton conceived the Sun as the source of life-giving energy and the entire universe as a chain, of which man is a homogeneous part; the entirety is a unit, created good by God.

Samuel Kliger, in "The 'Urbs Aeterna' in *Paradise Regained*" (*PMLA*), examined the Rome episode in the poem and found the poet independent in the use of the ideas he derived from Scripture, the pagan panegyrists, and the Christian apologists. Edward Wagenknecht's "Milton in *Lycidas*" (*CE*) was a cogitation upon Milton's motives in writing the poem, while Fred Emil Ekfelt's "The Graphic Diction of Milton's English Prose" (*PQ*) was a close examination of Milton's prose style in which his homely graphic diction is pointed out and glorified as both Elizabethan and eminently individual, a fitting complement to the diction of the long poems.

EIGHTEENTH CENTURY POETS

Several Pope items were printed during the year. Maynard Mack, in "On Reading Pope" (*CE*), contends that we habitually deny Pope the kind of close scrutiny his verse demands, while Paul F. Leedy, in "Genres Criticism and the Significance of 'Warton's Essay on Pope'" (*JEGP*), shows that even before the appearance of volume one of Warton's essay, there was some tendency not to regard Pope as the greatest poet of England. Edward H. Weatherly, in "Churchill's Literary Indebtedness to Pope" (*SP*), traces Charles Churchill's debt and concludes that the work of Pope was the most important single literary influence on Churchill's poetic career. That Pope's epistolary satire relied to a considerable degree upon Edward Young's *The Universal Passion,* a series of seven satires published between 1725 and 1728, is the theme of Charlotte E. Crawford's "What Was Pope's Debt to Edward Young" (*ELH*).

In "Gay's Mastery of the Heroic Couplet" (*PMLA*), Wallace Cable Brown contends that Gay's achievements in that form are greater than has been generally recognized. H. W. Starr in "Gray's Craftmanship" (*JEGP*) examines *The Elegy, The Progress of Poesy,* and *The Bard* and concludes that "even if Gray did not have the highest kind of creative imagination . . . at his best he unquestionably turned out exceptionally fine verse, largely as a result of an excellent critical insight and an infinite capacity for taking pains." In one of the best books of the year, *William Blake, The Politics of Vision,* (Holt), Mark Schorer reveals Blake as a powerful, clear-headed, individualistic thinker. The author examines the text of Blake's work to achieve a clearer interpretation of his mind—its torments, ideals, hopes, and creative powers. Explaining his mysticism, he writes: "Blake, partly because when he spoke clearly the world would not listen, assumed the gnostic mask and spoke obscurely."

EIGHTEENTH CENTURY PROSE WRITERS

Newton Demands the Muse (Princeton), by Marjorie Hope Nicolson, showed the influence of Sir Isaac Newton's treatise "Opticks" on English literature in the eighteenth century. F. R. Leavis in "Doctor Johnson" (*KR*) evaluated Krutch's biography, finding it good although he felt that the treatment of Johnson the poet is insufficient and inadequate. Arthur Friedman's "Goldsmith's Contributions to the *Critical Review*" (*MP*) was an attempt to establish an accurate canon of Goldsmith's writings in that journal. "Satire and Comedy in the Works of Henry Fielding" (*ELH*) by W. R. Irvin traced Fielding's progress from satire, as in *The Author's Farce* and *Shamela,* to the comic epic, as in *Joseph Andrews* and *Tom Jones*, and showed that the change from fantasy to reality in representing human action was marked. Rufus D. S. Putney, in "Smollett and Lady Vane's Memoirs" (*PQ*), concluded that the novelist was an active collaborator with Lady Vane in the composition of *Memoirs of A Lady of Quality,* thereby rejecting Howard S. Buck's view in *Study in Smollett* (1925) that Smollett had no hand in it.

An assertion that the depth and diversity of twentieth century Freudian criticism have their counterparts in the psychology of Hutcheson and Hume and their followers was advanced by Martin Kallich in "The Associationist Criticism of Francis Hutcheson and David Hume" (*SP*). A. Owen Aldridge, in "Shaftesbury's Earliest Critic" (*MP*), pointed out that Robert Day, in his *Free Thoughts in Defence of a Future State* (1700), was the first and almost the only critic to stress the logical fallacy in Shaftesbury's denial of a future state. *Essays on the Eighteenth Century* (Oxford) was a volume presented to Prof. David Nichol

Smith of Oxford in honor of his 70th birthday; in it 18 British and American scholars wrote on major and minor literary figures of the period between Anne and George III.

THE ROMANTIC POETS

A work of general interest was "The Romantic Movement: A Selective and Critical Bibliography for the Year 1945" (*ELH*) edited by Charles Frederick Harrold.

Wordsworth.—*A Wordsworth Anthology* (Scribner), edited by Laurence Housman, includes a sound and at times brilliant introduction by the editor. *The Mind of A Poet* (Johns Hopkins) by Raymond D. Havens is a study of Wordsworth's thought, with particular reference to "The Prelude." There are chapters on the parts matter-of-factness, passion, fear, wonder, solitude, silence, loneliness, animism, nature, anti-rationalism, the mystic experience, religion, and imagination played in the thought and poetry of Wordsworth. Francis Christensen's "Creative Sensibility in Wordsworth" (*JEGP*) shows how the poet could place the stress he did on sensation as the source and occasion of knowledge and at the same time view the mind or imagination as creative.

Coleridge.—A new edition of *The Rime of the Ancient Mariner* (Reynal & Hitchcock) was notable for an excellent essay by Robert Penn Warren in which he examined the criticism that formed about the poem and attempted to answer the question of whether or not the poem is essentially logical or illogical. Howard Hall Creed, in analyzing Coleridge's critical theory in "Coleridge on 'Taste'" (*ELH*), wrote: "Coleridge believes . . . in a criticism that keeps its eye on the poem; and his criterion for excellence has its beginning in an Aristotelian 'organic unity'. . . ." He stressed Coleridge's definition of taste as the conscious fusion of a knowing subject and a knowable object, which is the highest creative act possible among men. In "Is Coleridge Indebted to Fielding?" (*SP*), Nettie S. Tillett saw a link between Fielding and passages in *Biographica Literaria*, while Nathan Comfort Starr in "Coleridge's 'Sir Leoline'" (*PMLA*) supported A. H. Nethercot's contention that Coleridge was indebted to Hutchinson's *History of the County of Cumberland* for the name of Christabel's father.

Byron.—The lone Byron item was T. G. Steffan's "Byron Autograph Letters in the Library of the University of Texas" (*SP*), in which the 71 letters in the collection are listed and analyzed.

Keats.—Hyder E. Rollins' *Keats' Reputation in America to 1848* (Harvard) shows the manner in which Keats was sold to the American reading public, and Allen Tate's "A Reading of Keats" (*ASch*) is a re-evaluation of the poet on the 150th anniversary of his birth in which Tate concludes that, even if Keats goes unread by the next generation, he will remain one of the great English poets for a later generation to rediscover. The author questions the capacity of the present generation of readers to receive what Keats has to offer. "The Meaning of Keats's *Eve of St. Mark*" (*ELH*), by Walter E. Houghton, is an examination of the poem from the viewpoint that it is built on the principle of contrast—of the cathedral town and the paneled room—which points to the real antithesis that underlies its meaning. In "Swift and Keats" (*PMLA*), H. E. Briggs shows certain influences on Keats of his reading of Swift, especially echoes of *Gulliver's Travels* in five of Keats' poems. Richard H. Fogle, in "Empathic Imagery in Keats and Shelley" (*PMLA*), contends that Keats' poetry contains many examples of empathy (involuntary projection of oneself into an object), whereas Shelley's, though having emphatic tendencies, contains few. Shelley, says the author, is a poet of sympathy rather than of empathy.

Shelley.—Edmund Blunden's biography, *Shelley: A Life Story* (Viking), although capably written, offered little new material. Robert Metcalf Smith's *The Shelley Legend* was the target of a broadside of scholarly rebuke, the heaviest gun being fired by Newman I. White in *"The Shelley Legend* Examined" (*SP*), who attacked Smith's work as containing "more factual errors, exaggerations, and distortions than the present writer has ever before encountered in any printed book." Frederick L. Jones, in *"The Shelley Legend"* (*PMLA*), examined Professor Smith's book in detail and concluded that it is very unsound and misleading, "a semi-popular and thoroughly unreliable book," while Kenneth Neill Cameron, in "A New Shelley Legend" (*JEGP*), minimized the importance of the work and accused Smith of errors and distortions, particularly as to his picture of Shelley's sex life. Raymond D. Havens' *"Hellas* and *Charles the First"* (*SP*) showed Shelley turning from airy fancy to realism and "growing up" in the dramas and Theodore G. Ehrsam, in "Mary Shelley in Her Letters" (*MLQ*). pointed out certain errors in *The Letters of Mary W. Shelley,* edited by Frederick L. Jones in 1944.

NINETEENTH CENTURY PROSE

Thomas A. Kirby and Eric R. Bentley contributed Carlyle items, Kirby writing on "Carlyle and Irving" (*ELH*) in which he commented on the friendship between Edward Irving and the great essayist and its importance in influencing Carlyle. and Bentley analyzing in "The Premature Death of Thomas Carlyle (1795-1945)" (*ASch*) the decline of interest in Carlyle and lamenting his "premature" death in so far as the reading public is concerned, for "he was partly right, and much more irritatingly right, since he threatens some of our most treasured illusions about human nature and the common man." Theodore Baird, in "Darwin and the Tangled Bank" (*ASch*), examined the famous scientist's concern with literary composition and praised Darwin's ability to unite literature and science. William Blackburn's "Matthew Arnold and the Oriel Noetics" (*PQ*) revealed Arnold's debt to Richard Whately and Renn Dickson Hampden, intimate friends of his father, concerning the point of view which motivates his chief religious works.

Charles Dickens (Howell, Soskin), by Dame Una Pope-Hennessy, while not a new interpretation of Dickens, is a good, exact, straightforward biography which reveals once more how largely autobiographical Dickens' novels are. "Dickens and Mrs. Gaskell" (*HLQ*), by Annette B. Hopkins, tells the interesting story of the 13-year association of Dickens as editor of *Household Words* and *All the Year Round* with Mrs. Gaskell as a contributor of over 30 titles to those journals. Christof Wegelin, in "Dickens and Irving: The Problem of Influence" (*MLQ*), offers a detailed analysis and refutation of T. E. M. Boll's "Charles Dickens and Washington Irving" (*MLQ,* Dec. 1944), which suggested a considerable influence of Irving upon the English novelist.

Howard O. Brogan, in "Rachel Esmond and the Dilemma of the Victorian Ideal of Womanhood" (*ELH*), penned a penetrating analysis of the character of Rachel Esmond, "torn between Victorian martyrdom and primordial jealousy, deceiving herself as well as others by a chameleon-like concealment of secret desire, and against her better will leaving behind her a trail of frustrated loves and broken lives." "Thackeray and Sir Martin Archer Shee" (*PMLA*), by Harold H. Scudder, stated the case for the well known portrait painter, often attacked by Thackeray, as being the original of Mr. Smee in *Vanity Fair* and *The Newcomes*.

Laura L. Hinkley's *Charlotte and Emily: the Brontës* (Hastings House) was a serious if not completely successful study of the sisters which attempted to trace the processes of their genius. Coleman O. Parsons, in "Stevenson's Use of Witchcraft in *Thrawn Janet"* (*SP*), demonstrated Stevenson's adaptation of witch narratives in the writing of this novel, while Gladys W. Ekeberg, in *"The Ordeal of Richard Feverel* as Tragedy" (*CE*), analyzed the progress of Meredith's novel in tone from the comic to the tragic spirit. "The

Source-Book for Hudson's *Green Mansions*" (*PMLA*), by Carlos Baker, revealed that without doubt Hudson followed the general outline of Lady Morgan's novel of 1811, *The Missionary,* and found the original for Rima in it. *George Colman the Younger* (King's Crown), by Jeremy F. Bagster-Collins, is a life of the British playwright, producer, and censor of the Napoleonic era, while Hesketh Pearson produced in *Oscar Wilde: His Life and Wit* (Harpers) the fullest and perhaps the most trustworthy biography of Wilde yet to appear.

NINETEENTH CENTURY POETRY

"Four Letters of Hartley Coleridge" (*HLQ*), by Earl Leslie Griggs, was a printing of four letters discovered since publication of the author's *Letters of Hartley Coleridge* in 1936. Gertrude Reese's "Robert Browning and His Son" (*PMLA*) delved into the poet's career as a father, showing that the responsibility of doing his best for his son was always of first importance to Browning. "A Note on 'My Lady' of *Modern Love*" (*MLQ*), by William T. Going, questioned Sencourt's flat statement in his life of Meredith that Janet Duff Gordon is the "lady" of the sonnet sequence. Going claimed it a critical error to conceive of it as a narrative sequence of Meredith's marriage debacle. *Owen Meredith* (Columbia), by Aurelia Brooks Harlan, is a very able biography of a minor Victorian poet, and Hilton Brown's *Rudyard Kipling* (Harpers) is a critical biography in which the analytical comment is slender but rewarding.

TWENTIETH CENTURY

The year 1946 saw the publication of two books on Thomas Hardy: *Hardy in America* (Colby), by Carl J. Weber, a study of Hardy and his American readers, and *Hardy the Novelist: An Essay in Criticism* (Bobbs-Merrill), by Lord David Cecil, which presented some rather familiar opinions. J. O. Bailey's "Hardy's 'Mephistophelian Visitants'" (*PMLA*) is a study of Hardy's use of "an intruding force or invader to disturb the settled tranquillity of his main characters and to turn the current of their lives at critical points."

In "The Classical Reference in Conrad's Fiction" (*CE*), Robert L. Morris sees in *Lord Jim, Heart of Darkness,* and *Victory* Conrad's attempts to tell the truth about the effort of the civilized to support themselves against encroaching barbarism, while Diana Trilling, in "Lawrence: Creator and Dissenter" (*SRL*), provides an analysis of what lay behind Lawrence's work. Two Joyce items were Harry Levin's "James Joyce" in *The Atlantic Monthly,* an appreciation of Joyce in which he is termed "the Writer's Writer," and Adrienne Monnier's "Joyce's *Ulysses* and the French Public" (*KR*), reflections by the first publisher of the French translation of the book. Woodburn O. Ross' "W. Somerset Maugham: Theme and Variations" (*CE*) is a critical analysis of Maugham's fiction in which the novelist is held not to have enlarged his view of life since *Of Human Bondage*.

Frederick J. Hoffman, in "Aldous Huxley and the Novel of Ideas" (*CE*), contends that Huxley is no longer a novelist. "His recent novels are lengthy essays, to which are added entertainments. But his novels of the 1920's *are* novels of ideas . . ." Lee Elbert Holt, in "E. M. Forster and Samuel Butler" (*PMLA*), argues that Forster should be placed second only to Shaw in any hypothetical list of disciples of the Victorian novelist. "'Vision and Design' in Virginia Woolf" (*PMLA*), by John Hawley Roberts, expresses the belief that Mrs. Woolf's writings were influenced by her association with and reading of Roger Fry and that an understanding of Fry's theories will illuminate one's reading of Mrs. Woolf. Charles Richard Sanders's "Lytton Strachey Improves His Style, 1904-22" (*CE*) analyzes the revisions made for *Books and Characters,* and Chad

Walsh, writing in *The Atlantic Monthly,* states, in "C. S. Lewis, Apostle to the Skeptics," that the importance of Lewis is that "he is one of the few Christian apologists who can both write simply and at the same time avoid infuriating the more sophisticated readers by a pulpit vocabulary or the Sunday school flavor of piety."

E. K. Brown's "Two Formulas for Fiction" (*CE*) is an analysis of the methods of Henry James and H. G. Wells, stemming from Wells' charge that James over-unified his novels. Also treating Wells was "H. G. Wells Sees It Through" (*SRL*), a series of essays by Henry Seidel Canby, Elmer Davis, Clifton Fadiman, and Waldemar Kaempffert in appreciation of Wells and occasioned by his death. *J. B. Yeats: Letters to His Son W. B. Yeats and Others 1869-1922* (Dutton), edited by Joseph Hone, contained memories, opinions, conversations, quarrels, and descriptions of famous men who lived before and during the Irish Renaissance. Two interesting Housman items were a jubilee edition of *A Shropshire Lad* (Colby), with notes and a bibliography by Carl J. Weber, containing also a check list of the Colby College collection, tributes to Housman during the last 50 years, criticism, commentary, and textual exegesis, and Laurence Housman's "A Poet in the Making" in *The Atlantic Monthly,* in which A. E.'s brother commented on his development as a poet and on the manner in which he composed.

Shaw items included *G. B. S. 90* (Dodd, Mead), edited by S. Winsten, which is a collection of personal tributes to Shaw published on his 90th birthday; "Shaw as Social Critic" (*SRL*), by J. B. Priestley, in which the British novelist and essayist points out, that throughout his social criticism, Shaw has adhered to two ideas: that theory and practice must correspond, and the conception of the community as a living whole; and two articles by Eric Bentley, "Shaw at Ninety" in *The Atlantic Monthly,* an evaluation of G. B. S. which finds him a failure as a propagandist but not as a teacher, and "Bernard Shaw's Politics" (*KR*), which shows Shaw's politics to be part and parcel of Shaw's philosophy.

AMERICAN LITERATURE

Turning to the American scene, we find two articles on Edward Taylor, Nathalia Wright's "The Morality Tradition in the Poetry of Edward Taylor" (*AL*), which suggests that he was led to that tradition by a combination of influences: a keen dramatic sense, a congeniality with the thought of the Middle Ages, and long habits of theological speculation; and Willie T. Weathers' "Edward Taylor, Hellenistic Puritan" (*AL*), which notes that in *God's Determinations* the dialogue between Justice and Mercy follows the conventional pattern of a Theocritan song contest. George Snell, in "Washington Irving: A Revaluation" (*MLQ*), claims that Irving exerted a marked influence on other American writers of his time and unconsciously shaped a principal current in American fiction, Hawthorne, Longfellow, and J. P. Kennedy being among those directly influenced.

Russell Kirk in "Cooper and the European Puzzle" (*CE*) examines *The Bravo, The Heidenmauer,* and *The Headsman,* and shows Cooper's analysis of the dangers in government. In these books the novelist "struck resolute blows at tyranny in the guise of liberty and offered America a warning which this nation heeded little." In "Hawthorne's Use of Three Gothic Patterns" (*CE*), Neal Frank Doubleday sees these patterns appearing and recurring in Hawthorne's tales and romances: (1) mysterious portraits; (2) witchcraft; (3) the esoteric arts or researches which would break through the limitations of mortality. Randall Stewart, in "The Growth of Thoreau's Reputation" (*CE*), traces the history of that reputation and suggests reasons for Thoreau's increasing popularity today. For Whitman, Gay Wilson Allen published a valuable *Walt Whitman Handbook* (Packard).

HERMAN MELVILLE

There were several Melville items. Egbert S. Oliver, in "Melville's Picture of Emerson and Thoreau in *The Confidence-Man*" (*CE*), made out a case for Emerson as the prototype for Mark Winsome, the mystic, and for Thoreau as the basis for Egbert, his disciple. John C. McCloskey's "*Moby Dick* and the Reviewers" (*PQ*) is an examination of the critical reception of the novel in England and America and showed that, contrary to the general impression, the book was given many favorable reviews and was treated with wide respect. In "Taji's Quest for Certainty" (*AL*), Tyrus Hillway found in the adventure of the fifth pilgrim on the isle of Maramma a parallel of the main allegory in Melville's *Mardi*. Robert Penn Warren's "Melville the Poet" (*KR*) contained remarks on the poetry, supplementary to the preface of F. O. Matthiessen's *Selected Poems of Herman Melville*.

Lafcadio Hearn (Houghton Mifflin), by Vera McWilliams, is a valuable new biography throwing much light on Hearn and on Japan, while Ferris Greenslet's *The Lowells and Their Seven Worlds* (Houghton Mifflin) includes good chapters on James Russell Lowell and Amy Lowell. A correspondence which tells much about Amy Lowell's theories and practice in verse and prose is printed in *Florence Ayscough and Amy Lowell* (Chicago), edited by Harley F. MacNair.

MARK TWAIN

Mark Twain continued to be a popular figure. Edgar M. Branch published "A Chronological Bibliography of the Writings of Samuel Clemens to June 8, 1867" (*AL*), while Samuel Charles Webster edited *Mark Twain, Business Man* (Atlantic—Little Brown), the business and family correspondence of the author, representing what is probably the last large collection of heretofore unpublished Mark Twain material. The editor is the son of Twain's close friend and business partner and is himself a great-nephew of Twain. John W. Hollenbach, in "Mark Twain, Story-Teller, at Work" (*CE*), studied Twain's creative method in the humorous short story, and Mary A. Wyman in "A Note on Mark Twain" (*CE*) made a comparative analysis of the "Paladin" in *Personal Recollections of Joan of Arc* and his creator. John B. Hoben's "Mark Twain's *A Connecticut Yankee:* A Genetic Study" (*AL*) reviewed the manner in which the great humorist's satire came into being.

BAYARD TAYLOR AND HOWELLS

"Bayard Taylor and Goethe" (*MLQ*), by A. J. Prahl, is an attempt to show that Goethe's and Taylor's attitudes toward life and the world were strikingly alike, and that both were leaders of their generations in the struggle for new conceptions with regard to the individual and to mankind at large. Howells was treated by George Snell in "Howells' Grasshopper" (*CE*), an analysis of the writer in which he is made out to be the fountainhead of realism in American fiction, who merits the reproach of having drawn up a program only to erase half of it in the process, and by Edwin Harrison Cady in "The Neuroticism of William Dean Howells" (*PMLA*), in which Howells' early life is explored to show why he shunned a direct approach to the brutal realities of American life. His adolescent psychical difficulties were responsible for his neuroticism, according to Cady.

HENRY JAMES

The reborn popularity of Henry James resulted in a considerable amount of writing about him. *The Question of Henry James* (Holt), edited by F. W. Dupee, is a collection of critical essays (25), the earliest by Thomas Wentworth Higginson (1879) and the three latest by Jacques Barzun, William Troy, and Philip Rahv (1943). Howells, Conrad, Beerbohm, T. S. Eliot, Van Wyck Brooks, V. L. Parrington and others are represented. "The Spoils of Henry James" (*PMLA*), by Adeline R. Tintner, is an examination of "the work of art" in James's fiction, while "The Sentence Structure of Henry James" (*AL*), by R. W. Short, represented observations made upon the novels of the period 1901-1904. "Henry James and the New Jerusalem" (*KR*), by Quentin Anderson, described the theology of the elder James and applied it to some of the son's works. Entertaining reminiscences of a tenant of James and letters from him which reveal him as a kind and considerate landlord were to be found in Louise Boit's "Henry James as Landlord" in *The Atlantic Monthly.*

HARRIS AND BIERCE

John Stafford's "Patterns of Meaning in *Nights with Uncle Remus*" (*AL*) was a study of the "literary strategy" of Harris in the Uncle Remus volumes, while Clifton Fadiman's "Portrait of a Misanthrope" (*SRL*) showed Ambrose Bierce to be a writer whose bitterness and pessimism are strikingly modern. An appreciation of the style of Willa Cather, inspired by her 70th birthday, was E. K. Brown's "Homage to Willa Cather" (*YR*).

DREISER

The death of Theodore Dreiser brought out several articles. Howard Mumford Jones, writing in *The New York Times Book Review,* analyzed his position in American literature. His article, "Theodore Dreiser—a Pioneer Whose Fame Is Secure," states that he is the first American novelist to say that life is a problem in amorality. Francis Ludlow's "Plodding Crusader" (*CE*) was an astute analysis of Dreiser the man and of his works. At his worst, says Ludlow, he is an honest though blundering story-teller; at his best, he approaches genius. Woodburn O. Ross, in "Concerning Dreiser's Mind" (*AL*), concluded that Dreiser should never be called a mystic although at times he presents the mystic's position sympathetically.

OTHERS

In "F. Scott Fitzgerald" (*KR*), John Berryman expresses the conviction that *The Great Gatsby* is a masterpiece, but that its author, succumbing to the popularity formula, never thoroughly exercised his gift again. And in "Wolfe's Genius Seen Afresh," by Franz Schoenberner, in *The New York Times Book Review,* a German evaluates Thomas Wolfe and terms him the only one among serious contemporary writers to be endowed with "the prophetic Ethos and poetic Pathos of the true genius." Warren Beck's "E. B. White" (*CE*) is in praise of "the modern Thoreau."

AMERICAN DRAMA

In the field of drama, Samuel Kliger in "Hebraic Lore in Maxwell Anderson's *Winterset*" (*AL*) points to the extent to which rabbinical wisdom permeates the play, and Eric Bentley, writing in *The Atlantic Monthly,* analyzes *The Iceman Cometh* in "The Return of Eugene O'Neill."

An analysis of the verse of "Karl Shapiro: Poet in Uniform" (*CE*) was made by Dayton Kohler, and Horace Gregory and Marya Zaturenska published *A History of American Poetry 1900-1940* (Harcourt, Brace), a reasonably comprehensive account of twentieth century American verse, critically competent, with interesting biographical data on the poets.

GERMANIC LANGUAGES AND LITERATURES

By Richard Jente
Head, Department of Germanic Languages and Literatures,
University of North Carolina

BIBLIOGRAPHY

The most comprehensive and reliable bibliography for the Germanic languages and literatures is that compiled annually by Henry W. Nordmeyer for the *PMLA** Supplement. While this includes only writings of Americans, that by J. G. Kunstmann, "Recent Literature of the Renaissance: D. Germanic Languages," *SP* (April), records the productions of foreign scholars as well. The *GR* lists books received, while the *MfdU* annually lists alphabetically the members of departments at our colleges and universities and their publications. The *AGR* contains interesting and illuminating information concerning early German settlers in America and also biographies of prominent Americans of German origin who have made significant contributions to American civilization. It also brings in the April issue (pp. 29-35) a bibliography "Americana Germanica, 1945." The *ASR* covers similar achievements of Americans of Scandinavian origin and a bibliography of Scandinavian Americana. L. M. Price lists an extensive "Anglo-German Literary Bibliography for 1943-1944" (*JEGP*, 45, 97-102) and "Anglo-German Bibliography for 1945" (*JEGP*, 45, 337-339). Scholars interested in publications in our fields printed in Germany and Scandinavia will welcome the compilation made in Germany by Otto Springer, "Germanic Bibliography 1940-1945, Books and Articles in the Field of Germanic Philology Published in Europe, Especially in Germany and in the Scandinavian Countries during the War" (*JEGP*, 45, 251-326).

ANNIVERSARY PUBLICATIONS

The year 1946 marked the 400th anniversary of the death of Martin Luther; yet only a small number of articles in commemoration of the event have been noted: Werner Richter, "Wandlungen des Lutherbildes und der Lutherforschung" (*MfdU*, 38, 129-149); Heinz Blum, "Die Lebensform des lutherischen Menschen und ihr Schicksal" (*MfdU*, 38, 193-207); Paul Nettl, "Luther, the Musician" (*AGR*, 13, Aug., 12-15). The 300th Leibnitz anniversary is remembered, with emphasis on his influence on German thought by Heinrich Meyer, "Gottfried Wilhelm Leibnitz, 1646-1716" (*MfdU*, 38, 257-267). The following fall under the category of anniversary papers: Walter Gausewitz, "Richard Dehmel nach einem Vierteljahrhundert" (*MfdU*, 38, 533-538); J. F. L. Rachen, "American-German Journalism a Century Ago" (*AGR*, 13, June, 13-15); Hermann Barnstorff, "Pan, Jugend, und Simplicissimus ein fünfzigjähriger Rückblick" (*MfdU*, 38, 284-292).

LITERARY CRITICISM

We have noted but few articles in this category. The following are significant: Helmut Rehder, "Literary Criticism in Germany during the Romantic Period" (*MfdU*, 38, 237-243); Werner Richter, "Strömungen und Stimmungen in den Literaturwissenschaften von heute" (*GR*, 21, 81-113). Here belongs perhaps John R. Frey's "The Historical Present in Narrative Literature, Particularly in Modern German Fiction" (*JEGP*, 45, 43-67).

---

* Abbreviations: *AGR—American-German Review, ASR—American Scandinavian Review, GQ—German Quarterly, GR—Germanic Review, JEGP—Journal of English and Germanic Philology, MfdU—Monatshefte für deutschen Unterricht, MLN—Modern Language Notes, MLQ—Modern Language Quarterly, PMLA—Publications of the Modern Language Association, SP—Studies in Philology.*

EARLY LITERATURE AND LANGUAGE

A dissertation by Donald A. McKenzie, *Otfrid von Weissenburg: Narrator or Commentator? A Comparative Study,* has recently been published by Stanford University Press. E. H. Zeydel has continued his researches on Hrotsvitha and raises 14 points of doubt that her works are a hoax, "The Authenticity of Hrotsvitha's Works" (*MLN,* 61, 50-55; 281-283). Frances H. Ellis has outlined in detail a MS compiled by Hans Sachs about 1517, containing 399 Meisterlieder by 24 masters, with a complete index of first lines and indication of poet and "Ton," "Analysis of the Berlin MS *Germ. Quart. 414*" (*PMLA,* 61, 947-996). The content of the songs in the MS is treated by Sister Mary Juliana Schroeder: "Topical Outline of Subject Matter in the Berlin MS *Germ. Quart. 414*" (*PMLA,* 61, 997-1017). J. H. Scholte gives a new interpretation of the leading prose work of the seventeenth century: "Grimmelshausens *Simplicissimus* als verhüllte Religionssatire" (*PMLA,* 61, 1060-1086).

EIGHTEENTH CENTURY

Edith A. Runge has written a dissertation *Primitivism and Related Ideas in "Sturm und Drang" Literature,* published by the Johns Hopkins Press. R. T. Clark, Jr., has continued his researches on Herder with two articles: "Hamann's Opinion of Herder's 'Ursachen des gesunkenen Geschmacks'" (*MLN,* 61, 94-99); "Herder, Percy and the *Song of Songs*" (*PMLA,* 61, 1087-1100).

GOETHE AND SCHILLER

Here we have noted the following articles: John Henning, "Goethe's Translations of Ossian's *Songs of Selma*" (*JEGP,* 45, 77-87); Arnold Bergstraesser, "Die Erziehungsweisheit des alten Goethe" (*MfdU,* 37, 546-554); A. J. Prahl, "Bayard Taylor and Goethe" (*MLQ,* 5, 205-217); Ernst Jockers, "Faust und Meister, zwei polare Gestalten" (*GR,* 21, 118-131). A contrast in philosophy of life has been offered in a series of articles by Bernhard Blume, "Kleist und Goethe" (*MfdU,* 38, 20-31; 83-96; 151-164). F. H. Reinsch has published *The Correspondence of Johann Caspar Goethe,* the father of the poet (Univ. of Calif. Publ. in *Mod. Philol.* 28, no. 2, VI, 25-62). The dictionary to Goethe's Faust compiled under the direction of A. R. Hohlfeld has now been completed, *Der Wortschatz der Bühnenprosa in Goethes "Faust,"* the work of Paul M. Kittel and Norbert Fuerst (Madison, Wis.). The only outstanding article on Schiller that we have seen is that by Melitta Gerhard, "Schillers 'Götter Griechenlands' in ihrer geistesgeschichtlichen Bedeutung" (*MfdU,* 38, 32-43).

NINETEENTH CENTURY

This period has attracted the largest number of investigators. A comprehensive and thorough series of articles offering new interpretations is that by Henry W. Nordmeyer, "Kleists 'Amphitryon.' Zur Deutung der Komödie" (*MfdU,* 38, 1-19; 165-176; 268-283; 349-359). Jacquelin A. MacNaughton's dissertation on *Brentano's Novellen* has been published in part by New York University. Two articles on other Romanticists are: Wolfgang Paulsen, "Friedrich Schlegels 'Lucinde' als Roman" (*GQ,* 19, 173-190); Stuart Atkins, "Peter Schlemihl in Relation to the Popular Novel of the Romantic Period" (*GQ,* 19, 191-208). Walter Wadepuhl, "Heines Geburtsjahr" (*PMLA,* 61, 126-156), establishes definitely the birth date as Dec. 13, 1797, and states all facts leading to the confusion. Dorothy Lasher-Schlitt, "Hebbel, Grillparzer and the 'Wiener Kreis'" (*PMLA,* 61, 492-521), gives a minute account of the isolation of Hebbel from the literary circle in Vienna, emphasizing especially his relations with Grillparzer. J. D. Wright gives a reinterpretation of Hebbel's *Maria Magdalene* in "Hebbel's Klara. The Victim of a Division in Allegiance and Purpose" (*MfdU,* 38, 304-316). Marianne Thalmann has treated Stifter in several articles: "Das Menschentum in Stifters 'Haidedorf'" (*MLN,* 61, 361-372); "Stifters

Nachfolge Goethes" (*JEGP,* 45, 133-139); "Adalbert Stifters Raumerlebnis" (*MfdU,* 38, 103-111). Walter Silz, "Theodor Storm's 'Schimmelreiter'" (*PMLA,* 61, 762-783), produces cogent evidence to show this to be Storm's masterpiece. E. O. Wooley has continued his researches on Storm with an article "The Literary Relations of Storm with His Children" (*MfdU,* 37, 517-532). H. Reichert analyses "Gottfried Keller's Conception of Freedom" (*MfdU,* 38, 65-82).

CONTEMPORARY LITERATURE

As always, the modern writers of the past generation and those still active attract the attention of a large number of investigators and commentators. Here only a selection of writings can be presented. Those authors whose work is ended are to be treated first. Max Lederer, "Einige Bemerkungen zu Adolf Wilbrandts *Der Meister von Palmyra*" (*MLN,* 61, 551-555), remarks on the effect of this once popular play upon Mark Twain who saw it in Vienna; F. K. Richter, "Gegenwärtiger Stand der Stehr-Forschung und einige ihrer Probleme" (*MLQ,* 5, 317-327); J. C. Blankenagel presents a comprehensive study of "Jakob Wassermann's Conception and Treatment of Character" (*MLQ,* 5, 3-20).

Of the several recent estimates of Ernst Toller and his works, the following is the most sympathetic and comprehensive: W. A. Willibrand, *Ernst Toller and His Ideology* (Univ. of Iowa Humanistic Studies, vol. VII), 1945. Franz Werfel is viewed from various angles by A. D. Klarmann, J. R. Frey, and Max Lederer in a series of articles (*GQ,* 19, 113-120; 121-128; 129-131). The poems of Franz Werfel have been translated by Edith Abercrombie Snow (Princeton Univ. Press, 1945).

The death of Gerhart Hauptmann in June, 1946 called forth a large number of articles: Felix A. Voight, "Gerhart Hauptmann unter der Herrschaft des Nazismus" (*MfdU,* 38, 298-303); Walter A. Reichart, "The Totality of Hauptmann's Work" (*GR,* 21, 143-149); F. B. Wahr, "Gerhart Hauptmann's Shorter Poems" (*GQ,* 19, 215-229; Oskar Seidlin, "Gerhart Hauptmann zum Gedenken" (*MfdU,* 38, 332-337); Walter Reichart, "Zu Gerhart Hauptmanns Tod" (*MfdU,* 38, 323-331); F. A. Klemm, "Gerhart Hauptmann, in Memoriam" (*AGR,* 13, Oct., 39-40).

Frank X. Braun has written a dissertation *Kulturelle Ziele im Werk Gustav Frenssens* (Ann Arbor). Walter H. Perl surveys the activity of *Thomas Mann 1935 bis 1945* (New York), publishing material from close association with the author. Max Lederer has presented a brief survey: "Recent Drama in Germany" (*GQ,* 19, 176-180).

Ernst Wiechert, a frail and sensitive man, who suffered in concentration camps for his anti-Nazi convictions, is receiving deserved attention in this country: Arnold Bergsstraesser, "Das einfache Leben. Zu dem Roman von Ernst Wiechert" (*MfdU,* 38, 293-297); B. Q. Morgan, "Ernst Wiechert's *Hirtennovelle,* Versuch einer Stilanalyse" (*GQ,* 19, 274-282); Oskar Seidlin, "Begegnung mit Ernst Wiechert" (*GQ,* 19, 270-273).

The recent announcement that Hermann Hesse was awarded the Nobel Prize for Literature should arouse deserved interest in this German novelist, who for many years has lived in voluntary exile in Switzerland.

GERMANS IN AMERICA

As noted above under "Bibliography," the *AGR* is particularly dedicated to this field and should be read especially by all those Americans of German descent interested in their heritage. A thorough study of what types of German literature were brought to the attention of the Germans of the central west during the latter half of the nineteenth century has been compiled by Erich P. Hofacker, *German Literature as Reflected in the German-Language Press of St. Louis Prior to 1898* (Washington Univ. Studies, 16, St. Louis). Two further items should be noted: A. J. Prahl, "An Unpublished Letter of Bayard Taylor" (*MLN,* 61, 55-57);

Oskar Seidlin, "Frank Wedekind's German-American Parents" (*AGR*, 13, Aug., 24-26).

TEACHING OF GERMAN IN AMERICA

Among the many articles in the pedagogical journals (*MfdU, GQ, MLQ,* etc.) on methods of teaching German, the most significant is the January (1946) number of the *GQ* which is devoted entirely to "A Symposium on Intensive German Courses for Civilians," which is a report on intensive courses as carried on in 17 leading institutions.

SCANDINAVIAN LANGUAGES AND LITERATURES

The American-Scandinavian Foundation (New York) has sponsored three recent publications: Henry G. Leach, *A Pageant of Old Scandinavia* (Princeton U. Press); Søren Kierkegaard, *Works of Love,* translated from the Danish by David F. Swenson and Lillian M. Swenson (Princeton U. Press); *Four Plays by Holberg,* translated by Henry Alexander (Princeton U. Press). Lee M. Hollander has investigated consonant riming in Old Norse poetry: "Observations on Skaldic Rime Usage with Special Reference to the *dunhent* and *liðhent* Varieties of *dróttkvætt*" (*PMLA,* 61, 891-909). Madelaine R. Brown and F. P. Magoun have analysed a Norse saga giving information of the trip to Vinland of "Tyrkir, First German in North America" (*MLN,* 61, 547-551). The *ASR* brings numerous articles of particular interest to Americans of Scandinavian origin. *Scandinavian Studies and Notes* contains many short articles on aspects of the Scandinavian languages, especially of the ancient periods, and also notes on the literature of Scandinavia.

ROMANCE LANGUAGES AND LITERATURES

By Ernest Richard Moore
Associate Professor, Oberlin College

GENERAL

As more and more veterans returned to already over-crowded classrooms throughout the United States, the number of teachers employed rose sharply. They filtered up through the instructional system and brought with them a lower teaching standard. A rising cost of living caused many teachers to abandon their profession for more lucrative employment. Some adjustment of salaries to real dollar value is now taking place and may, if it continues, counteract a dangerous exodus from the teaching profession.

Teachers of romance languages have met the general unrest of the post-war period, as well as the upsurge of interest in languages, by reexamining the ends and methods of language instruction. Thus the ASTP intensive language program is being experimented with at such institutions as Cornell University and has received considerable publicity in the language journals (for example, *Hisp*[1] 90 *et passim,* and *MLJ* 89-97). The appearance of *Planning the Modern Language Lesson* (Syracuse) indicates that these new ideas are still consonant with past experiences. A welcome project to establish national norms of various language skills is under way (*Hisp* 31-37).

Brazilian Portuguese studies have

---

[1] The following abbreviations are used in this section. Numbers refer to the pagination of the 1946 issues of the journal. *BA, Books Abroad; FR, French Review; HAHR, Hispanic American Historical Review; Hisp, Hispania; HR, Hispanic Review; Ital, Italica; L, Language; MLF, Modern Language Forum; MLJ, Modern Language Journal; MLN, Modern Language Notes; MLQ, Modern Language Quarterly; MP, Modern Philology; PMLA, Publications of the Modern Language Association; PQ, Philological Quarterly; RFH, Revista de Filología Hispánica; RHM, Revista Hispánica Moderna; RI, Revista Iberoamericana; RR, Romanic Review; S, Speculum; SP, Studies in Philology.* University presses are indicated by the name of the institution alone.

increased, supporting the desire of many Americans to admit the third American language into our school system.

BIBLIOGRAPHY

General.—Chandler's valuable *Bibliographical Guide to the Romance Languages and Literatures,* compiled by Palfrey, Fucilla, and Holbrook, was brought to date in a third edition. A continuing "Annotated Bibliography of Modern Language Methodology" (*MLJ* 290-308) by W. H. Rice added 209 items to Coleman's *Analytical Bibliography* (1938). The yearly survey, "Recent Literature of the Renaissance" (*SP* 275-460), contained important Italian, Spanish, and French sections. The *RFH* and *RHM* contained a delayed but continuous general Spanish bibliography. R. U. Pane's *English Translations from the Spanish, 1484-1943* (Rutgers), though containing some errors, is a handy guide to the literature of Spain.

Italian.—Giuseppe Prezzolini's impressive *Repertario bibliografico della storica e della critica della letteratura italiana dal 1932 al 1942* (Vanni), volume 1 (A to L), carries forward that series. O. Bontempo's rapid survey of "Italian Literature in the War Interim (1939-45)" (*MLJ* 462-474) included Italian and American items. V. Luciani's annotated bibliography of current Italian studies in America appeared in each issue of *Italica*. This review dedicated issues to H. D. Austin and E. H. Wilkins, giving lists of their writings (131-135, 260-266). V. Scanio compiled an excellent annotated supplement to Rossi's (1896) work on "The *Collezione Giordani*" (*Ital* 189-236).

French.—Otis Fellows listed over 75 periodicals, their editors and contributors, in *The Periodical Press in Liberated Paris* (Syracuse). "Anglo-French and Franco-American Studies" (*RR* 105-126) annotated scholarly publications for 1945. H. Kurz published the first "Critical Bibliography on La Boétie" (*RR* 20-36).

Spanish. — Bibliographers offered guidance to the unfolding literatures of Latin American countries in numerous articles. R. Grismer continued his series on the literatures of Spain and Spanish America (Perine). J. M. Hill presented the first careful listing of known or ascribed works of Rodrigo de Reynosa (*HR* 1-21). L. L. Barrett continued his "Theses Dealing with Hispano-American Languages and Literatures" (*Hisp* 220-221). Mexican items: B. Udick, "Bibliografía de Manuel José Othón" (*RI* 351-378), poet; P. Radin published part 3 of his "Annotated Bibliography of the Poems and Pamphlets of Fernández de Lizardi" (*HAHR* 284-291); E. R. Moore, "Una bibliografía descriptiva de *El Periquillo Sarniento*" (*RI* 383-403), a novel by Lizardi. F. B. Steck added to research tools *A Tentative Guide to Historical Materials on the Spanish Borderlands* (Catholic Historical Society). J. T. Reid, aided by leading Cuban writers, compiled an annotated "best book" list: "Knowing Cuba through Books" (*Hisp* 494-499).

Portuguese.—"Portuguese Literature" (*Hisp* 561-567), by M. Ciley, lists 109 authors by subject. Apropos of Manuel de Paiva Boléo's compilation of studies in Portuguese philology, F. M. Rogers' additions (*Hisp* 613-627) filled regrettable lacunae.

LANGUAGE

General. — The rift between neogrammarians and eclectics is seen in R. A. Hall, "The State of Linguistics" (*Ital* 30-34) and "The Neo-grammarians" (*RR* 244-255), opposed by M. A. Pei, "The State of Linguistics: Reply to a Mechanist" (*Ital* 237-240). G. Bonifont re Vegliotic Latin *ce* and *ci* offered "The Spread of Phonological Change" (*PMLA* 1-6). Frank Gaynor edited a practical polyglot (English, German, French, Spanish, Italian) *International Business Dictionary* (Philosophical Library); and P. M. Spurlin wrote interestingly on "The Founding Fathers' Knowledge of French" (*FR* 120-128).

French. — "Old Provençal *saig,* 'hangman,' and two poems on *jongleurs* by Cervervi de Girona" (*ML* 411-444), by K. Lewent, contains the full texts and excellent notes. U.

Holmes traced "Old French *grifaigne* and *Grifon*" (*SP* 586-594) to determine sense and development. R. A. Hall made an attempt at systematic reconstruction of "Old French Phonemes and Orthography" (*SP* 575-585), and P. Delattre (*PMLA* 7-41) postulated certain phonemic changes in OF by studying phonetic stages in the more accessible modern French. By means of "Linguistic investigation of Old French high spirituality" (*PMLA* 331-369), H. A. Hatzfeld revealed a neglected mystic vocabulary which he appended in a table together with Latin and Spanish parallel terms. The erudite L. Spitzer was active: "Suffixes masculins dans les prénoms féminins en français" (*RR* 127-149), "La particule 'mon'" (*PMLA* 607-619), "Turpulin" (*MLN* 104-108), "Yiddisch (t)schale(n)t Französisch chaud?" (*MLN* 101-104). C. H. Bissell's history of "The Word *demitasse*" (*MLN* 340-343) is enlightening. R. Hardré and M. K. Hooke continued their "Notes sur la traduction du pronom personnel anglais sujet de la troisième personne" (*FR* 24-32) with convincing citations from modern French writers.

Spanish.—Yakov Malkiel contributed a solid discussion on the phonology, word formation, and etymology of "Castilian *albricias* and its Ibero-Romance congeries" (*SP* 498-521) and "The Word Family of Old Spanish *recudir*" (*HR* 104-159). R. Lida and A. Alonso illustrated end-of-syllable consonant relaxation in "Geografia fonética: -l y -r implosivas en español" (*RFH* 313-345). L. Spitzer studied "Enaziado, anaciado" (*RFH* 160-162), "Lerdo" (*RFH* 43-44), "Anc. Prov. *aib*—Anc. esp. *aleve*" (*MLN* 419), "Valencia la bella" (*RFH* 259-276), "Arrenquín" (*RFH* 281-282). G. Bonfante appended an additional note to his 1943 study of "El nombre de Cataluña" (*RFH* 389-390). R. L. Predmore reported his observations on Guatemalan Spanish: "Dobletes modernos" (*Hisp* 213-215) and "Pronunciación de varias consonantes" (*RFH* 277-280). An amusing catalog of "English Terms in Bogotá" (*Hisp* 55-66) and observations on "Current Variations in the Past Indicative Uses of the *-ra* Form" (*Hisp* 355-362) was offered by C. N. Staubach; W. Wilson reported English words used in Mexico (*MLJ* 345-346). Pleasant and instructive is L. Crespo's "Los verbos ser y estar" (*Hisp* 45-55), describing *estar* as an indicator of comparative conditions. "The future and conditional of probability" (*Hisp* 363-375) may be safely taught principally as modes of the "be" and "have" verbs employed orally, according to D. Bolinger. E. F. Helman found sufficient data to prove the existence of "Early Interest in Spanish in New England (1815-35)" (*Hisp* 339-351).

Italian.—H. D. Austin asked "Does Dante Mention Clover?" (*PMLA* 585-588) and clarified the meaning of "The Noun *mena* in the Divine Comedy" (*S* 237-240). The origin of "Il nome dell'Abruzzo" (*Ital* 18-22) was traced by G. Bonfante; the etymology of "It. *vogare, voga*" (*Ital* 23-29) occupied L. Spitzer. *Palamarium* in its relations to *paloma* and *palomar* was investigated by Henry and Renée Kahane (*Ital* 178-188). L. Sandri and W. Kaulfers devised "An Aural Comprehension Scale in Italian" (*Ital* 335-351) to determine readiness to participate in normal speech situations.

Portuguese.—F. Rogers, in "Insular Portuguese Pronunciations in Madeira" (*HR* 235-253), distinguished it from standard Lusitanian by eight characteristic phonetic differences; C. Rice, "Five Portuguese Etymologies" (*PMLA* 584-585); J. Parker, "A Brazilian Portuguese Word List" (*MLF* 103-114), a useful comparison of a colloquial list with the *Graded Word Book* (Crofts, 1945); C. Stavrou, *Pronunciation of Portuguese in Brazil* (McKay).

FRENCH LITERATURE

General. — W. Giese translated *French Lyrics in English Verse* (Wisconsin). "The Language of the Poet" (*SP* 93-120) of the past helps to explain modern theories of pure poetry, according to H. Hatzfeld; M. Françon gives an interpretation of a similar matter in "Poésie pure et art pour art" (*FR* 14-17).

Early.—A. Adler explained in "*Hervis de Mes* and the Matrilineal Nobility of Champagne" (*RR* 150-161) this practice as of local and not Germanic origin; he also added "A Note on the Amazons in *Anseÿs de Mes*" (*MLN* 451-454). V. Koenig schematicized the wager cycle (*MP* 76-83), particularly as relating to OF examples. By understanding that "The Symbolism of *Perlesvaus*" (*PMLA* 42-83) is a substitution of knights for Biblical characters, this work achieves greater literary stature, according to J. Carman. U. Holmes edited a competent critical third edition of *Adenet le Roi: Berte aus grans pies* (North Carolina). On troubadours: "An Old Provençal *Chanson de mal mariée*" (*RR* 3-19), annotated by K. Lewent, was written by the Catalan Cerveri de Girona; "Lusignan in the Provençal Biographies" (*SP* 1-5), by A. H. Schutz. "The Traditional Background of *Partonopeus de Blois*" (*PMLA* 916-946) was found by H. Newstead in a complex of traditions brought together around the figure of Morgain la Fée. Grace Frank, studying Villon, concluded that he was "incorrigible and impenitent" (*RR* 225-236) and that his adversary in love was Perrenet Marchant (*MLN* 113-115).

Sixteenth Century.—L. Ellis contributed a critical edition of *Estienne Jodelle: Cléopatre Captive* (Pennsylvania) to the history of French tragedy. "The Background and Sources of Remy Belleau's *Pierres précieuses*" (*PMLA* 624-635) were found principally in Pliny and Marbode by U. Holmes. James Buffum studied *L'influence du voyage de Montaigne sur "Les essais"* (Princeton), and H. Kurz cast a negative vote on "Did Montaigne Alter La Boétie's *Contr'un?*" (*SP* 619-627). N. Osborne brought out *Doctor in the French Literature of the Sixteenth Century* (Oxford).

Seventeenth Century. — N. Edelman proved that *Attitudes of Seventeenth-Century France toward the Middle Ages* (Columbia) have not been sufficiently known to show the full contribution of that period. "Segrais and Boileau" (*RR* 162-167), argued W. Sylvester, were separated by personal differences rather than disparate basic views. The inventor of the religious novel in France, "Jean-Pierre Camus" (*PMLA* 711-738) was the subject of a thorough study and bibliography by M. Storer. A tranquil stoic and not a libertine, concludes J. Patrick after "A consideration of *La terre australe connue* by Gabriel de Faigny" (*PMLA* 739-751).

Eighteenth Century. — B. Morrissette disputes as untenable Marcel Langlois' attribution of *La princesse de Clèves* to Fontenelle (*MLN* 267-270). G. R. Havens edited *Jean-Jacques Rousseau: Discours sur les sciences et les arts* for the MLA monograph series. M. Gilman investigated "The Poet According to Diderot" (*RR* 37-54); D. McGhee discussed in "The conte philosophique" (*PMLA* 752-761) a literary type developed and characterized by Marmontel and Mercier. Some 35 works, examined in *Dramatic Parody by Marionettes in Eighteenth-Century Paris* (Columbia) by F. W. Lindsay, show little instructional intent; S. Travers in "Parody in the French Theater" (*RR* 237-243) and in "The Melodrama Satirized in Theatrical Parody" (*MLN* 299-304) reaches the same conclusion.

Nineteenth Century. — Both M. Carter's *Role of the Symbol in French Romantic Poetry* (Catholic) and A. George's "The French Romanticists and the Chain of Being" (*MLQ* 131-144) stress the importance of metaphysical conceptions to writers of the period. Johns Hopkins Press published companion studies: T. C. Walker, *Chateaubriand's Natural Scenery*; C. Lynes, *Chateaubriand as a Critic of French Literature*; and E. Malakis, *Chateaubriand: Itinéraire de Paris à Jerusalem*, a critical edition. The humanitarian appears in H. Hastings' "Man and Beast in Lamartine" (*PMLA* 1109-1125). "The Courtesan in the French Theatre, 1831-80" (*FR* 161-166) is classified as *demi-mondaine, cocotte, grie, prostitute*, by S. Brawn. O. Moore saw a trend toward photographic "Realism in *Les Misérables*" (*PMLA* 211-228) at successive stages of its composition. Three Rimbaud studies appeared, two by New Directions: *Rimbaud* by W. Fowlie; *Prose Poems from the 'Illuminations,'* translated by Louise Varèse. M. Mengers released some unpublished letters (1894-98) by another symbolist poet, Henri de Régnier (*RR* 55-67). The war drew attention to H. Rufener's *Biography of a War Novel, Zola's 'Débâcle'* (King's Crown).

Twentieth Century.—Critical studies were few but interesting. R. Virtanen found that a practitioner of "absolute" scepticism, Remy de Gourmont, did not free himself entirely from dogmatism (*MLQ* 337-355); K. N. Douglas examined the literary attacks made by "Paul Valéry on Pascal" (*PMLA* 820-834); R. Vigneron revealed undeniable departures from plans and principles in Proust's "Structure de *'Swann'*" (*MP* 102-128); A. Fite discussed Georges Duhamel in "Croniqueur moderne and the roman fleuve" (*MLF* 93-99). The sojourn of "Saint Exupéry in New York" (*MLN* 458-463) was described by E. Fay, while J. Fermaud saw in him a conflict between living as poetry and as action (*PMLA* 1201-1210. J. O'Brien revealed much about "Clandestine French Literature during the Occupation" (*MLJ* 440-448), principally the *Editions de Minuit*.

ITALIAN LITERATURE

Dante.—The principal study was G. Walsh's *Dante Alighieri, Citizen of Christendom* (Bruce). D. Vittorini expressed a belief that "Dante's Contribution to Esthetics" (*Ital* 265-274) was a theory of art which freed him from the bonds of the Trivium and Quadrivium. W. Friederich proved that "Dante's fame among the poets and philosophers of Germany, 1800-65" (*PQ* 173-189) was considerable and stimulating. In Boncompagno's *Rhetorica,* H. Wieruszowski found "An Early Anticipation of Dante's *Cieli e scienze*" (*MLN* 217-228). Dante made "Use of Latin in the *Vita nuova*" (*MLN* 108-112) to indicate oracular as contrasted with ordinary utterance. Textual clarifications appeared in *Italica* (73-81, 88-89, 136-141).

Michelangelo, Croce, and Others.—A. H. Gilbert supported "Machiavelli on Fire Arms" (*Ital* 275-286). In "Michelangelo and the Doctrine of Imitation" (*Ital* 90-99), R. Clements stated that the artist's preoccupations were typical of the day but his individualism led him to emulate and surpass his models. "Some Pictorial Aspects of Early Mountebank Stages" (*PMLA* 84-96) were reviewed by J. McDowell. H. Marraro made interesting comments on "Italian Music and Actors in America" (*Ital* 103-117). J. De Simone in *Alessandro Manzoni: Esthetics and Literary Criticism* (Vanni) may be thanked for bringing together scattered data on Manzoni as a literary critic. Literary critics and criticism were also the subjects of papers by G. Borgese, "Literary Criticism in Italy During the Romantic Period" (*Ital* 65-72), down to Croce; N. Orsini, "Bernadetto Croce during the War Years" (*Ital* 1-3), seeing no change in his philosophical liberalism; and W. Giuliano, "Spiritual Evolution of Giovanni Papini" (*Ital* 304-311).

SPANISH LITERATURE

Early.—George Umphrey published Part 2, on verse technique, of "Spanish Ballads in English" (*MLQ* 21-33). "The Phonology of Speech of the Negroes in Early Spanish Drama" (*HR* 322-339), by E. de Chasca, included sound elements of popular, Portuguese, and African origin. The poet "Ruy Páez de Ribera" (*HR* 22-37) was again the subject of biographical research by E. B. Place. S. Gilman investigated the composition-time element in the *Celestina* (*RFH* 147-159). M. Lida indicated that the popularity of "Fray Antonio de Guevara" (*RFH* 346-388) was caused by a widespread decline in literary taste. The second volume of *Torres Naharro: Propalladia and Other Works* (Bryn Mawr), edited by J. E. Gillet, appeared.

Golden Age.—E. B. Knowles added "Notes on the Madrid, 1605, Editions of *Don Quijote*" (*HR* 47-58), and S. Gilman, after reviewing the many articles dealing with "Alonso Fernández de Avellaneda" (*HR* 304-321), concluded he was a Dominican friar from Aragon. The renewed interest of our age in mysticism accounts for "The Revival of Saint John of the Cross" (*MLQ* 145-152) argued S. C. Rosenbaum. E. W. Hesse compared "Two Versions of Calderon's *El laurel de Apolo*" (*HR* 213-234).

Modern.—In an article "On Espronceda's Personality" (*PMLA* 1126-1145), W. T. Pattison reasoned that this poet's Byronic traits were more a pose than a reality. J. Leslie gave the full text of "Larra's Unpublished Anacreontic" (*MLN* 345-349). S. Eoff expressed his belief that "Pereda's Conception of Realism" (*HR* 281-303) was vigorous but held in check by his artistic decorum. Other articles: E. S. Morby, "García Lorca in Sweden" (*HR* 38-46), most popular Spanish writer in that country; R. Predmore. "La visión de Castilla en la Obra de Antonio Machado" (*Hisp* 500-506); J. Van Horne, "Literary Letter from Madrid" (*Hisp* 206-213), covering two years of residence; H. Weyl, translator, *José Ortega y Gasset: Concord and Liberty—Essays* (Norton).

SPANISH AMERICAN LITERATURE

Several important volumes appeared during 1946. E. H. Hespelt and others edited the best one-volume *Anthology of Spanish American Literature* (Crofts) yet to appear. The late Pedro Henríquez Ureña's *Literary Currents in Hispanic America* (Harvard) shows that critic's usual acumen. W. R. Crawford gave to the press *A Century of Latin-American Thought* (Harvard), and A. Torres-Ríoseco revised his popular *Epic of Latin American Literature* (Oxford), including a chapter on Brazilian literature.

Studies in the field of poetry included O. Olivera Ibarra, "La poesía del 'Papel periódico de la Havana' (*RI* 259-272); J. Mallo, "Rubén Darío en Barcelona durante su último viaje a España" (*RHM* 37-47); R. Stanton, "Salvador Díaz Mirón, el poeta" (*MLF* 50-57); D. Walsh, "César Tiempo" (*Hisp* 197-205, *cf. RI* of 1945, 99-106), a naturalized Jewish poet writing in Argentina; M. Arce, "La poesía de Juan Guzmán Cruchaga" (*RI* 341-344), a contemporary Chilean poet; A. Campa, *Spanish folk poetry in New Mexico* (New Mexico); Muna Lee, *Jorge de Carrera Andrade: Secret country* (Macmillan), a translation accompanied with the original Spanish selected poems of this Ecuadorian poet.

Four articles dealt with statesmen-writers: J. Leslie, "Problems Relating to Sarmiento's *Artículos*" (*MLN* 289-299), materials wrongly included or omitted from his *Obras;* M. P. González, "Cuba's Fernando Ortiz" (*BA* 9-13), a view of his writings; A. Vargas Barón, "José Joaquín Vargas Valdés" (*RI* 239-257), a nineteenth century Columbian; S. Nemtzow presented the Ecuadorian critic of the clergy Montalvo as essentially true to Catholic religious morality (*RI* 243-267).

A Venezuelan novelist "Manuel Díaz Rodríguez" (*RI* 49-54) was presented as a victim of moral indecision by L. Munguió; J. R. Spell proved Guridi y Alcocer was the author of a satirical description in Lizardi's *Quixotita* (*HAHR* 405-408); H. L. Johnson's "El primer siglo del teatro en Puebla de los Angeles" (*RI* 295-340) is the best account available, very well documented.

PORTUGUESE AND BRAZILIAN LITERATURE

J. D. M. Ford's long-awaited edition of *Luis de Camões: Os lusíadas* (Harvard) has not escaped criticism. "The authenticity of de Hollanda's *Dialogos em Roma*" (*PMLA* 1018-1028) is substantiated by internal evidence, R. Clements reported. Some Brazilian studies are: L. L. Barrett, "Erico Veríssimo and the Creation of Novelistic Character" (*Hisp* 323-338), showed the fictional world as closely reflecting the factual world; E. R. Moore recorded folk rituals in "Three Brazilian Nights of Magic" (*Hisp* 67-68) and "Os dias joaninos" (*RI* 109-111).

COMPARATIVE LITERATURE

Italian influence on Spanish and English writers was seen by many scholars. F. Pierce discussed "Some Themes and Their Sources in the Heroic Poem of the Golden Age" (*HR* 95-103) and indicated the influence of Tasso and Boiardo in Spanish epic poems; J. C. Fucilla found "A Passage in Quevedo's *Buscón* (*Ital* 102) borrowed from Berni and he also illustrated "The Influence of Ercilla and Tasso on Escóiquiz" (*HR* 68-75); B. Hall discovered "A Further Tasso Imitation in Francisco de Medrano" (*HR* 65-66). J. Draper's "Shakespeare and the *conversazione*" (*Ital* 7-17) sought to show that this parlor game of formal courtly discussion was used in appropriate plays throughout his career; J. Van Horne contrasted the cult of pain with faith in the common man in "Leopardi y Whitman" (*Ital* 161-169); F. Townsend in "Sydney and Ariosto" (*PMLA* 97-108) discussed the structural elements the former learned to employ from the latter.

Several careful studies explored French influences and borrowings. T. Russell found bonds between *Voltaire, Dryden, and Heroic Tragedy* (Columbia); M. Fayer, between *Gide, Freedom and Dostoevski* (Columbia), especially in the latter's conception of Christianity; C. Beall, between "John Eliot's *Ortho-epia galica* and Du Bartas-Goulart" (*SP* 164-175). P. Wadsworth traced antithetical use of realism and idealism as "A Formula of Literary Criticism from Aristotle to La Bruzère" (*MLQ* 35-42). "An Analogue of L'Ermite in *Zadig*" (*MLN* 115-118) of Voltaire can be found in ancient Hebrew legends of Asmodeus, according to H. Loss. W. Vordtriede examined "Novalis' *Heinrich von Ofterdingen* as a source for Baudelaire" (*MLF* 100-102).

Spanish writers were also debtors or creditors in literary currency. W. Smith said that almost certainly Montaigne had borrowed from Vives (*Hisp* 483-493), a fellow educator; W. Perry discussed Nathan Field's indebtedness to Cervantes in "The Curious Impertinent in *Amends for Ladies*" (*HR* 344-353); and E. Morby elucidated the many bonds of interest between "William Dean Howells and Spain" (*HR* 187-212). A. Krappe traced shepherd and king in *El libro de exemplos* through Persia to India (*HR* 59-64); H. Holmes referred to Walter Owen's translation of Estanislao del Campo's *Fausto* in "Una interpretación pampeana de Goethe y Gounod" (*RI* 229-241); R. Niess sought and found Federico Gamboa's indebtedness in *Reconquista* to Zola's *L'Oeuvre* (*PMLA* 577-583); S. Rosenbaum indicated the direct influence of the French poet Albert Samain on Delmira Agustini (*RI* 273-277).

LATIN LITERATURE *

By GEORGE DEPUE HADZSITS
PROFESSOR, UNIVERSITY OF PENNSYLVANIA

PLACE OF THE CLASSICS IN EDUCATION

Sir Richard Livingstone adds to his reputation as one of the leading thinkers on the subject of the place of the Classics in Education, in his illuminating essay "Education for the

---

* Periodicals are abbreviated as follows: *AHR*, *American Historical Rev.*; *AJA*, *American Journal of Archaeology*; *AJP*, *American Journal of Philology*; *CB*, *Classical Bulletin*; *CJ*, *Classical Journal*; *CO*, *Classical Outlook*; *CP*, *Classical Philology*; *CQ*, *Classical Quarterly*; *CR*, *Classical Rev.*; *CW*, *Classical Weekly*; *HSCP*, *Harvard Studies in Classical Philology*; *HThR*, *Harvard Theological Rev.*; *Is.*, *Isis*; *JHI*, *Journal of History of Ideas*; *JRS*, *Journal of Roman Studies*; *Lang.*, *Language*; *PhQ*, *Philological Quarterly*; *Spec.*, *Speculum*; *PAPA*, *Proceedings of the American Philological Association*; *TAPA*, *Transactions* of the same; *Verg.*, *Vergilius*; *YCS*, *Yale Classical Studies* (all references are to 1946).

Biographical information will be found in lists of "Recent Publications," appearing in *CW*, and in "Recent Books," listed in *CJ*, as well as under "Classical Articles in Non-Classical Periodicals" which *CJ* also publishes.

Modern World" (*Atlantic Monthly*, Nov. 1946, 75-79). Compare also his recent *Plato and Modern Education* (Cambridge Univ. Press), which pleads for a more spiritual conception of education.

As predicted in the 1945 issue of THE AMERICAN YEAR BOOK (p. 963), the Harvard Report on *General Education in a Free Society* is exerting a wide influence. A valuable report on its effect on Latin Studies appears in the *CW* (40, 18-23). The Harvard Report has been followed by others, *e.g.*, Yale, Indiana, Amherst, Washington University, North Carolina; in all of these, solution of the problem is sought—what place the Classics should occupy in our American postwar collegiate education.

Particularly noteworthy is the penetrating study of Waldo G. Leland, entitled "The Present Task of the Humanities" (*School and Society*, 64, 281-284), which points out the imperative need of scholarship that it should be "an act of social faith" in order to assist in the cure of the ills of men's minds.

The editor of the *Classical Journal*, N. J. DeWitt, calls attention to the Report of the Committee of the American Bar Association which recommends the study of Latin in Pre-Legal Education (*CJ* 41, 212). John Murray, London, printed a brochure. A Symposium, entitled *The Classics and Education for the Professions* (see H. C. Lipscomb's rev., "Latin and the Professions in England," in *CJ* 41, 358-359). Compare also George W. Currie, *Essentials of General and Scientific Latin* (Boston, Chapman and Grimes).

Professor W. C. Korfmacher touches on a very important point in his conception of the place of Latin in our Education: "Latin and the New Internationalism" (*CW* 39, 122-124), and C. T. Murphy discusses an important experiment, at Princeton, a cooperative course in the Humanities, which develops the great idea of "The Western Tradition: Man and His Freedom" (*CW* 39, 130-133).

"Successful Writing and Foreign Language Study" is a Symposium on the Question whether Foreign Languages Improve Your Own—with the answer in the affirmative, given by an impressive number of distinguished men of letters (*CJ* 42, 23 seq.).

Articles on the *Values* of the Classics continue to appear. Notable among these have been: "English Teaching and the Classics," by A. G. Keller (*School and Society* 62, 49-51, critical, but important for that very reason). "On Classics in Education," H. B. Joffee, is valuable for the bibliography that accompanies the text (*CJ* 41, 213-218).

Special attention deserves to be called to the new plan of the Cincinnati Classical Scholarships (*CJ* 42, 8), which have been inaugurated in order to promote the cause of classical education in a community of unusual enlightenment.

One more rousing appeal: "Classics, Pure and Applied," by D. G. Taylor (*Greece and Rome*, 15, 33-41). *Credo for a Classicist* is a brief, but telling statement of the "Case," by G. F. Else, which should be in the hands of all "Educators" (U. of Iowa). "Latin and Greek in French Canada" (*CJ* 41, 320-322), Maurice Lobel, is enlightening.

LITERATURE AND LINGUISTICS

"Versificator Quam Poeta Melior" is the title of a stimulating study, by W. H. Alexander (*CJ* 41, 219), on Cicero's claim to poetic inspiration, but the truth of Alexander's argument is questioned in a spirited reply by J. W. Spaeth (*CJ* 42, 105).

"Julius Caesar as a Man of Letters," by C. C. Mierow, should be widely read. It reviews the opinions of Hirtius, Pollio, Cicero, Tacitus, and Suetonius, and gives an admirable statement of Caesar's literary gifts (*CJ* 41, 353-357).

"Horace and the Elegists" reveals with great acumen, Horace's opposition to the Alexandrinism and anti-Augustanism of the Elegiac school in Rome. The latter—the instrument of the gay set of the Capitol—was inevitably opposed by Horace, and Prof. Brooks Otis throws fresh light on a most interesting, ancient literary quarrel (*TAPA* 76, 177-190).

L. P. Wilkinson, *Horace and His Lyric Poetry* (Macmillan), receives high praise from Clarence Mendell (*CW* 39, 86, see, also, the review, *AJP* 67, 280-283).

Elizabeth H. Haight writes well on "The Lyre and the Whetstone, *Horatius Redivivus*" (*CP* 41, 135-142). Miss Haight defends Horace, as thinker, against some recent criticism, and seeks the secret of his persistent *generative* force in the world's literature. Grant Showerman's *Horace and His Influence* should not be forgotten.

H. L. Tracy asserts that Vergil was not wholly successful in his compounding of epic and tragic material in *"Aeneid IV,* Tragedy or Melodrama" (*CJ* 41, 199-202).

Severely critical is the study of R. P. Oliver, "The First Edition of the *Amores*" (*TAPA* 76, 191-215), in which the distinguished scholar seeks to establish the thesis that the present text of Ovid's *Amores* represents extensive revisions in subject and style, of a date as late as 2 *A.D.*, in consequence of which, conclusions regarding Ovid's early style or character can not be drawn from our text.

"Seneca's Tragedies—A New Interpretation" is the title of a remarkably penetrating investigation of Seneca's aim in tragic composition, which is represented as teaching Neo-Stoicism and its attitude toward problems of life, the emotions, sin, retribution, death, and destiny. Berthe Marti analyzes Seneca's literary achievement in the light of that aim (*TAPA* 76, 216-245).

Karl Lehmann writes, interestingly, on "A Roman Poet Visits A Museum," a learned commentary on a passage in Martial which argues for the belief that Martial is referring to a definite art collection in Rome (*Hesperia* 14, 259-269).

E. G. Berry writes most interestingly on the remarkable volume *Holmes–Pollock Letters* (Correspondence of Justice Holmes and Sir Frederick Pollock), published by the Harvard University Press. This article calls attention to the remarkable knowledge these cultivated gentlemen had of the Classics (*CW* 39, 22-24) and works about the Classics.

Pearl Kibre writes a very valuable article on "The Intellectual Interests Reflected in Libraries of the 14th and 15th Centuries" (*JHI* 7, 257-297).

Attention should again be called to the excellent *Handbook of Classical Drama* of P. W. Harsh, which is reviewed by J. N. Hough (*CJ* 41, 181-183).

The Catholic University of America Press continues publication of its notable series of Classical Studies, among which the following may be noted here: *The Syntax of the Letters of Pope Gelasius I,* P. V. Bagan (*AJP* 67, 278-280).

Prof. J. Whatmough investigates the "Dialects of Ancient Gaul" (*HSCP* 55, 1-85), with his well-known, scholarly acumen (*CW* 39, 16 and 40, 6).

W. H. Kirk continues his valuable studies of "The Syntax of the Gerund and the Gerundive, II" (*TAPA* 76, 166-176).

RELIGION AND PHILOSOPHY

"Livia and the Roman Imperial Cult" is treated ably by Gertrude Grether, who has elaborated on a topic in the history of Roman Religion that richly deserved this careful study (*AJP* 67, 222-252).

A fascinating article of Harold Mattingly (*HThR* 39, 212-215) on "The Religious Background of the *Historia Augusta,*" argues for the belief that the *Historia* belongs to a period between two tides, *i.e.*, of the entry of Christianity into imperial favor and its transition to persecution and intolerance (*ca. A.D.* 312-390).

"Pagan Divine Service in Late Antiquity" calls attention to the many similarities between pagan and Christian divine services. The author of this stimulating study is M. P. Nilsson (*HThR* 38, 63-69; cf. *CW* 39, 48).

J. Dwight re-opens the question of "The Origin of the Pre-Julian Calendar (*CJ* 41, 273-275).

Caesar and Christ is the title of

another brilliant exposition of pagan and Christian life by Will Durant (*CJ* 41, 349-350). Walter W. Hyde's volume, *Paganism to Christianity in the Roman Empire,* has been issued by the University of Pennsylvania Press.

"Remotum a Notitia Vulgari" is the forbidding title of an article of first-rate importance prepared by Susan Savage (*TAPA* 76, 157-165). It is concerned with secret practices of Roman religious colleges. These secrets were of such sanctity that the very existence, as well as efficacy, of Roman cults was thought to depend upon them.

"A New and Broader Interpretation of the Ideality of Aeneas" is an illuminating study of an old problem of first consequence in the history of Ethics. John N. Hritzu has added to our knowledge of the subject. (*CW* 39, 98-103, 106-110).

Marcus Aurelius' Meditations have a perennial appeal as is demonstrated by the new text, translation, and commentary, prepared by A. S. L. Farquharson for the Oxford University Press (*CJ* 42, 96-97).

"The Moral Basis of *Hospitium Privatum*" is significant for its emphasis upon the ethical-religious content of the ancient concept of hospitality; friendship, faith, protection of Zeus are involved (*CJ* 41, 248-253, O. E. Nybakken).

All classical scholars should note "Leibniz's Message to Us" which occupies an entire number of the *JHI* (7, 385 seq.), as the ancient materialism can best be understood by comparison with such later thinkers, as Leibniz.

Clyde Murley gives an extremely interesting account of "Behavior Patterns of Atoms, among the Ancients" (*CO* 23, 71-72) and examines the importance of the "Dance of the Atoms."

W. H. Stahl examines, with great care, possible reasons for the Greek abandonment of the heliocentric theory, and explains the true relations of Copernicus to the brilliant theorizing of Aristarchus; "The Greek Heliocentric Theory and Its Abandonment" (*TAPA* 76, 321-332).

Glanville Downey contributes a brilliant exposition of his theme, "The Pagan Virtue of *Megalopsychia* in Byzantine Syria." This is a study of the concept as revealed in two mosaics at Antioch-on-the-Orontes, and Dr. Downey suggests that this virtue came to be regarded as a principal pagan virtue, acceptable to and accepted by Christian emperors (*TAPA* 76, 279-286) as an official imperial virtue.

Prof. N. W. DeWitt adds to his reputation as a profound scholar in ancient philosophy by his invaluable essay on "Epicureanism and Christianity" (Univ. of Toronto *Quarterly,* 14.3, 250-255) and by another genuine contribution: "Roman Epicureanism," which is concerned with the influence of Epicureanism in ancient Italy for four centuries (*Transactions of the Royal Society of Canada,* 39, 31-44).

HISTORY, LAW, AND POLITICS

Eva Matthews Sanford writes well on the important theme of "The *Pax Romana* and World Trade" (*CO* 23, 77-78).

Lillian B. Lawler introduces us to an "idol of the Roman Empire," in her "Portrait of a Dancer," which has sociological-historical interest (*CJ* 41, 241-247).

"Roman Revenues from Greece after 146 *B.C.*," are discussed by H. Hill (*CP* 41, 35-42), concluding that Rome's policy was lenient.

"Swimmers in Warfare" should interest a wide audience. This article refers to ancient and modern practices and, properly, calls attention to Julius Caesar's skill (*CW* 39, 34-35, H. N. Couch). Likewise, the article of H. E. Wedeck dwells on practices, both ancient and modern, in his "Ancient Spies" (*CW* 39, 31-32), and J. N. Hritzu writes on "Modern Military Aspects of Hannibal's Crossing the Rhone" (*CO* 23, 72-73).

Equally significant for the present day is F. H. Cramer's "Book-Burning and Censorship in Ancient Rome—A Chapter from the History of Freedom of Speech" (*JHI* 6, 157-196; *CW* 39, 48).

Dr. E. S. McCartney writes entertainingly on "Looking Back at the War News" (*CJ* 41, 168-172), giving Roman parallels, with which he is exceptionally familiar. Compare, also, his exciting "Spider versus Snake" (*CW* 39, 133-134), and "An Illuminating Example of Homeopathic Magic" (*CW* 39, 21-22), offering a Chinese parallel to a famous Greek story.

W. C. Korfmacher's "The Gentleman as the Romans Knew Him," (*CW* 39, 138-141) discusses an important subject that deserves full treatment in a series of monographs.

"Epigraphical Evidence for Social Charity in the Roman West," M. P. P. McGuire (*AJP* 67, 129-150), will interest many.

The Classical Republicans. An Essay on the Recovery of a Pattern of Thought in Seventeenth Century England, by Z. S. Fink (Northwestern Univ. Press), is highly praised by H. C. Lipscomb (*CW* 40, 31-32), as significant and timely, and as contributing to our knowledge of the value of the theory of "mixed" form of government, advocated by Polybius, Cicero, and Plutarch.

Prof. L. R. Taylor argues for a new "Date of the Capitoline *Fasti,*" which are housed in the Palazzo dei Conservatori in Rome. In arguing for her new date (*ca.* 21-17 *B.C.*), Professor Taylor has the courage to cross swords with older scholars of great reputation, and, in doing so, enhances her own standing for critical scholarship (*CP* 41, 1-11).

"Law and Justice in the Ancient World" (*JHI* 7, 298-320), by A. H. Chrousk, associates Roman law with Stoicism and argues that law, in the modern sense, began in Rome, while a philosophy of law originated in Greece.

F. De Zulueta's *The Roman Law of Sale* (Oxford Classical Press) receives high praise (*Cl. Rev.* 60, 45-46).

Henry Montgomery's "The Architect of the American Republic" is another excellent study of Thomas Jefferson's reasoned and justified predilection for the Classical orders of architecture (*CW* 39, 74-78).

FINALIA

Worthy of longer notice are the following titles which are, however, self-explanatory: R. E. Arnold (Ed.), *Classical Essays Presented to James A. Kleist* (St. Louis Univ. Press); F. S. Boas, *Aspects of Classical Legend and History in Shakespeare* (N. Y., Oxford Univ. Press); C. M. Bowra, *A Classical Education* (Oxford Univ. Press) and *From Virgil to Milton* (Macmillan); A. T. Geoghegan, *The Attitude towards Labor in Early Christianity and Ancient Culture* (Catholic Univ. of America Press, *CP* 41, 181-183); Phillip DeLacy: "The Stoic Categories as Methodological Principles" (*TAPA* 76, 246-263); R. S. Rogers: "Domitius Afer's Defense of Cloatilla" (*TAPA* 76, 264-270); Robert O. Fink, "A Fragment of a Roman Military Papyrus at Princeton" (*TAPA* 76, 271-278); Elizabeth C. Evans: "Galen the Physician as Physiognomist" representing a relatively new field (*TAPA* 76, 287-298); I. E. Drabkin: "Notes on the Text of Caelius Aurelianus" (*TAPA* 76, 299-320); T. R. Glover, *The Ancient World* (London, Penguin Books); Buxton, C. R., *Prophets of Heaven and Hell—Vergil, Dante, Milton, Goethe* (Cambridge Univ. Press); F. Copleston, *A History of Philosophy: Greece and Rome* (London, Burns Oates); R. C. Trevelyan's verse translation of *Virgil, Eclogues and Georgics* (Macmillan; *CP* 41, 59-60).

"Ancient Rome Brought to Life," by Rhys Carpenter, and "The Roman Way," by Edith Hamilton, in *The National Geographic Magazine* (Nov. 1946) are extremely interesting, textually and pictorially magnificent.

CLASSICAL JOURNALS

Mention should be made of the new Classical journals that are venturing upon a career, in the midst of the Classical depression: *La Parole,* Journal of the Linguistic Circle of New York, and *Traditio: Studies in*

Ancient and Medieval History, Thought, and Religion (*AJP* 67, 365-369).

FOREIGN BOOKS

Books are now being received in this country which had appeared abroad during wartime in spite of the devastation of war, and they bear witness to the heroism of authors. Classicists will hail *Bibliographie de la littérature latine* (Paris, "Les Belles Lettres"), an invaluable bibliographic manual. We are gradually learning of the extraordinary activity of Classical scholars abroad throughout the enormous difficulties of war; (*CW* 40, 15-16, B. L. Ullman *et al.*). To the titles there listed should be added: *Cicero u. der Humanismus,* Walter Ruegg (Rhein-Verlag, Zurich).

TRIBUTE TO E. K. RAND

A noble tribute, composed in Latin, to the memory of the lamented E. K. Rand, appears in the *CJ* (41, 266-269) entitled "Laudatio Funebris." The Marquette Univ. Press has released Professor Rand's *Cicero in the Court Room of St. Thomas Aquinas,* the last volume of this brilliant and prolific scholar.

GREEK LITERATURE *

By Royal Case Nemiah
Professor, Dartmouth College

GENERAL

There are various evidences of renewed vitality in the field of Greek scholarship. The publication during 1946 of one revised edition of an elementary Greek book and one entirely new one is clear proof that Americans want to know something about Greek first-hand and will not be contented with second-hand knowledge derived from translations and critical commentaries. A reading of this article, showing the multiplicity of the areas of human endeavor that have their roots in Greek civilization, will constitute but another proof of the value of Greek studies, if our civilization is to have depth as well as breadth. With the release of so many scholars from government service and the gradual return of the world to peacetime conditions, one may look forward with enthusiasm and excitement to new discoveries, particularly in the field of archaeology, which will throw new light on ancient Greek culture, an integral part of our own occidental culture.

THE GREEK LANGUAGE

A welcome sign of continued and, it is to be hoped, increased interest in the Greek language is the appearance of a new edition of *A New Introduction to Greek* by A. H. Chase and H. Phillips, Jr. (Harvard Univ. Press). Still another book at the elementary level is *A Reading Course in Homeric Greek* by R. V. Schoder and V. C. Horrigan (Edwards Bros., Inc., Ann Arbor, Mich., 1945). In the field of New Testament Greek should be mentioned *A Comparative Lexicon of New Testament Greek* by L. R. Eliott (Central Seminary Press, Kansas City, 1945). Of interest to specialists in the field of Greek is *A Reverse Index of Greek Nouns and Adjectives* by C. D. Buck and W. Petersen (Chicago Univ. Press, 1945), in which the words are arranged according to terminations. Also by Buck is "The Dialect of Cyrene" (*CP,* 41, 129), using new evidence from Italian excavations to show the similarity of this dialect to that of its mother city, Thera. M. J. Higgins is the author of an important article entitled "The Renaissance of the First Century and the Origin of Standard Late Greek" (*Traditio,* 3, 49).

---

* Abbreviations: *AJA*, *American Journal of Archaeology; AJP*, *American Journal of Philology; BMFA*, *Bulletin of the Museum of Fine Arts* (Boston); *BMMA*, *Bulletin of the Metropolitan Museum of Art* (New York); *BPIASA*, *Bulletin of the Polish Institute of Arts and Sciences in America; CJ*, *Classical Journal; CP*, *Classical Philology; CW*, *Classical Weekly; HTR*, *Harvard Theological Review; PAPA*, *Proceedings of the American Philological Association; TAPA*, *Transactions of the American Philological Association; UCPCP*, *University of California Publications in Classical Philology*. Titles of books, monographs, and periodicals are italicized; those of articles are in quotation marks.

HOMER

The Sather Classical Lectures this year (vol. 20) dealt with Homer in R. Carpenter's *Folk Tale, Fiction and Saga in the Homeric Epics* (Univ. of Cal. Press). G. M. Bolling continues his Homeric studies with "Wackernagel's Psilotic Homer" (*CP,* 41, 232), a defense of Wackernagel's theory; "The Etymology of Ichor" (*Language,* 21, 49); "An Emendation in Homer's Iliad, 21, 396-398" (*Ibid.* 21, 92); and "Dative Plural of the 'a' and 'o' Stems in Homer" (*Ibid.* 21, 261). A. S. Cooley, in "Where Was Homer's Pylos?" (*CJ,* 41, 310), believes with Strabo and Doerpfeld that it was the modern Kakovatos rather than Ano Englianos, as held by Kourouniotis and Blegan. F. M. Combellack in "Achilles—Bare of Foot?" (*CJ,* 41, 193) investigates the problem of when and where the Homeric heroes wore shoes. A. P. Dorjahn writes of the courtesy and liberalism of Homeric heroes toward their enemies in "Homeric Foemen" (*CW,* 40, 2). Two similar articles on the value of Homer for our contemporary world are G. M. Howland's "Some Observations on the Iliad" (*CW,* 39, 13) and P. A. Sullivan's "Rereading the Iliad" (*Ibid.* 39, 18).

LYRIC AND DRAMATIC POETRY

In the field of the lyric is to be mentioned *Poems of Alcman, Sappho, and Ibycus* in an English version by O. Marx and E. Morwitz (Knopf, 1945). Pindar receives attention in the interpretation of *Olympian,* 9, 100-112 by R. Lattimore (*CP,* 41, 230); *Pythian,* 2, 52-56 by E. Wyckoff (*CP,* 41, 160); and the Epilogue of his *Second Pythian* by L. Woodbury, who shows Pindar's contempt for rivals and enemies and his profound aristocratic spirit (*TAPA,* 76, 11).

Contemporary interest in Greek tragedy and comedy is seen in the performance in New York of Lewis Galantière's adaptation of Jean Anouilh's version of the *Antigone* of Sophocles with Katharine Cornell and Sir Cedric Hardwicke; of W. B. Yeats' translation of Sophocles *Oedipus the King* with Laurence Olivier and a cast from the "Old Vic"; and of a somewhat abortive revival of Aristophanes' *Lysistrata* with a Negro cast. Interest is further indicated by the publication of *Plays of the Greek Dramatists,* containing representative plays in standard translations of Aeschylus, Sophocles, Euripides, and Aristophanes (Caxton House). There is an excellent article by H. J. Rose entitled "Theology and Mythology in Aeschylus" (*HTR,* 39, 1).

L. A. Post makes an interesting suggestion in "Propaganda for Pericles in the Seven Against Thebes" (*PAPA,* 76, xxvii), showing that, although Eteocles had been cursed by Oedipus and Pericles was cursed as an Alcmaeonid, even persons under a curse could be patriotic citizens. This, says Post, was propaganda for Pericles, who had been *choregus* for Aeschylus' Persians in 472 *B. C.* P. C. Wilson (*Ibid.* 76, xxxix) in "Athena's Persuasion (Aesch. Eumen. 797-916)" says that the change of the Erinyes from violent enemies to willing listeners is owing to the fact that they are persuaded by Athena's repeated and clear presentation of the good. It is a triumph of intelligence over passion. In "Ho Philomeros Sophokles and Eustathius," H. W. Miller shows the value of Eustathius' work on Homeric criticism in the study of the text of Sophocles and its interpretation (*CP,* 41, 99). For those who like this sort of thing there is "Studs Lonigan and Oedipus" by H. Toliver (*CJ,* 41, 145). In "The Third Stasimon of Euripides' *Helena,*" C. P. Golann maintains that this stasimon, usually considered irrelevant, is an integral part of the play. It fits the

Stesichorean version of the myth on which the play is based as well as the divine role of Helen which Euripides had in mind when he wrote the play (*TAPA,* 76, 31). Robinson Jeffers' *Medea* should be mentioned in connection with Euripides (Random House).

M. Platnauer (*AJP,* 67, 262) offers emendations of Aristophanes' *Knights* (1061-2), *Birds* (265-6; 492), and *Frogs* (1106-7). In "Aristophanes and Medical Language" (*TAPA,* 76, 74), H. W. Miller shows the large number of medical terms in the plays, some of them used literally, but most of them metaphorically for humorous reasons. From the hand of that veteran translator, Sir Gilbert Murray, come two versions: *Menander: The Rape of the Lock* and *The Arbitrators* (Oxford Univ. Press). P. W. Harsh in "Hamartia Again" (*TAPA,* 76, 47) holds that Aristotle's *Poetics* (1453a), viewed in the light of the practice of Greek tragic poets, in that of Plato's interpretation of Greek tragedy, and of Aristotle's theories elsewhere expressed, indicates that *hamartia* in the above passage includes the notion of culpability.

G. F. Else in "The Case of the Third Actor" (*TAPA,* 76, 1) shows that in early tragedy the poet was the first actor and was called *tragoedos.* The second and third actors were called *hypokritai,* both being introduced by Aeschylus. When, with Sophocles, the poet was no longer actor, the term *hypocrites* was generalized; but the old terminology was revived in the fourth century for old plays.

MISCELLANEOUS AUTHORS

C. M. Dawson in "An Alexandrian Prototype of Marathus?" (*AJP,* 67, 1) gives a translation, textual and literary criticism of the third of a series of poems known as the *Iambi* of Callimachus from the Oxyr. Papyri. He suggests a prototype of Tibullus I, 4. G. Vlastos, in his article "On the Prehistory in Diodorus," supports the thesis that, in Diodorus I, 8, the historian represents broadly a Democritean point of view (*AJP,* 67, 51).

The only addition to the Loeb Classical Library (Harvard Univ. Press, 1945) since the writing of the article on Greek Literature for THE AMERICAN YEAR BOOK, 1945, is Vol. V (Books 13-19) of the *Roman Antiquities* of Dionysius of Halicarnassus, translated by E. Cary. In "The 'Volitilization' of Peregrinus Proteus" (of whom Lucian wrote), R. Pack (*AJP,* 67, 334) shows that Peregrinus and his followers were influenced by contemporary speculation on the ascent of the soul. In "Pausanias and the Pentelic Quarries," J. Day discusses Pausanias I, 19, 16 (*CP,* 41, 162).

In the field of New Testament scholarship, E. J. Goodspeed writes on *Problems of New Testament Translation* (Chicago Univ. Press, 1945), and at the same press has appeared (1946) *New Testament Life and Literature* by D. W. Riddle and H. H. Hutson.

LITERARY STUDIES

These studies comprise a variety of subjects. *The New England Quarterly* (18, 325) contains an article by S. G. Brown on "Emerson's Platonism." J. P. Pritchard discusses the influence of Longinus on Lowell in his "Lowell and Longinus" (*TAPA,* 76, 358), and B. Einarson is the author of *Longinus, "On the Sublime" and Sir Joshua Reynolds, "Discourses on Art"* (Packard, Chicago, 1945). J. E. Tobin writes on "Alexander Pope and Classical Tradition" (*BPIASA,* 3, 343), and E. S. LeComte on *Endymion in England, the Literary History of a Greek Myth* (King's Crown Press, 1944). I. Silver contributed an excellent article in four parts to *The Modern Language Quarterly* (Vol. 60, pp. 66, 356, 670, 949) on "Du Bellay and Hellenic Poetry."

D. M. Robinson, in "The Wheel of Fortune" (*CP,* 41, 207), shows that the idea of the wheel of fortune, usually thought of as Roman in origin, was really Greek. M. C. Nahm's *Aesthetic Experience and Its Presuppositions* (Harper), though a comprehensive book on the whole field, devotes much space to a discussion of Plato and Aristotle. "The Mediaeval

Accessus ad Auctores" (*Traditio*, 3, 215), by E. A. Quain, is an interesting treatise on the custom of mediaeval commentators to preface the works of an author with remarks on his life, work, philosophical purposes, and trends. It was found in works on grammar, rhetoric, dialectic, canon and civil law, theology, philosophy, and even in creative literature. It was common to both Greek and Latin authors.

PHILOSOPHY

The interest in Greek philosophy is very gratifying at a time when the world's great need is ideas leading toward a more spiritual way of life. Naturally, Plato and Aristotle receive the greatest amount of attention, but good work is also being done in the other fields. K. von Fritz continues his "Nous, Noein and Their Derivatives in Pre-Socratic Philosophy (excluding Anaxagoras). (Cf. THE AMERICAN YEAR BOOK, 1945, 970.) Part II. The Post-Parmenidean Period (Melissus, Zeno, Empedocles, Protagoras, the Atomists)" (*CP*, 41, 12). This should be underlined as a work of considerable importance.

K. Burke contributes "The Socratic Transcendence" to the *Sewanee Review* (53, 630). A very good introduction to the study of Plato is A. Koysé's *Discovering Plato* (Columbia Univ. Press, 1945), translated by L. C. Rosenfield from the original *Introduction à la Lecture de Platon* (Brentano's, 1945). In "The Role of Eryximachus in Plato's *Symposium*" (*TAPA*, 76, 85), L. Edelstein points out that the representation of Edelstein is not a caricature of the physician but that he plays an important role in the framework of the dialogue. An important addition to Platonic studies is R. Hackforth's *Plato's Examination of Pleasure*, a translation of the *Philebus* with introduction and commentary (Macmillan, 1945). R. G. Hoerber has an article on "Character Portrayal in Plato's Lysis" (*CJ*, 41, 271).

Important in the history of Platonic criticism is S. R. Jayne's *Marsilio Ficino's Commentary on Plato's Symposium*, with introduction, text and translation from the Latin (Univ. of Missouri Press, 1944). Another study in the tradition of Plato is F. W. Lenz's "The Quotations from Aelius Aristides in Olympiodorus' Commentary on Plato's *Gorgias*" (*AJP*, 67, 103). Two articles of I. M. Linforth deserve mention. In "The Corybantic Rites in Plato" (*UCPCP*, 13, 121) he shows by Plato's references to these rites that in all cases he approves of them as curing the ills of the soul and that therefore they must have been purged of the excesses of many eastern rites. In "Telestic Madness in Plato, *Phaedrus*, 244, DE," he shows that Plato held ritualistic madness to be effective in curing mental disorders and that this madness is a beneficial *mania* like that of poetry, prophecy, and love (*Ibid.* 13, 163). A brilliant essay is that of A. Nehring on "Plato and the Theory of Language" (*Traditio*, 3, 13), tracing the subject from Plato to our own time.

Significant in the study of the Aristotelian tradition is J. A. McWilliams' *A Study of Saint Thomas' Commentary on the Eight Books of Aristotle's Physics* (Catholic Univ. of America Press, 1945). In his article on "Aristotle on Aesthetic Pleasures" (*CP*, 41, 43), H. L. Tracy says: "Aristotle brings to aesthetics the attitudes of the scientist and logician." H. E. Mierow in his "In Defense of Aristotle" (*CJ*, 41, 122) disagrees with Schmidt (*Gesch. d. gr. Lit.*, Munich, 1934), who maintains that Aristotle's dictum about pity and fear is a reflection of Fourth Century conditions. Mierow holds that it is an objective and universal judgment on tragedy.

In his "The Stoic Categories as Methodological Principles" (*TAPA*, 76, 246), P. De Lacy shows that the Stoics used the four categories of substance, quality, disposition, and relative disposition in all three branches of their philosophy: logic, physics, and ethics. G. Downey in "The Pagan Virtue of Megalopsychia in Byzantine Syria" (*TAPA*, 76, 279) shows the similarity of this virtue to St. Paul's Charity. E. R. Goodenough contributes "Philo on Immortality" (*HTR,* 39, 85). Finally to be mentioned is L. Spitzer's article "Classical and Christian Ideas of World Harmony, Part II," a continuation of his notable article (Cf. THE AMERICAN YEAR BOOK, 1945, 970).

HISTORY AND CIVILIZATION

In this field is to be found work of considerable variety. G. Vlastos in his "Solonian Justice" (*CP,* 41, 65) states: "The most important of Solon's social and economic reforms was prompted by his concept of political justice. Therein lies his greatness: that, despite the traditionalism of his concept of wealth, he was able to envisage this revolutionary conception of justice based on the solidarity of the *polis.*" C. A. Robinson, Jr., in "The Date of Themistocles' Ostracism" (*AJP,* 67, 265), argues for Thucydides' date (471) against that of Aristotle in the *Constitution of Athens* (462). L. E. Lord is the author of *Thucydides and the World War* (Harvard Univ. Press, Martin Classical Lectures, XII).

J. E. Charles writes on "The Anatomy of Athenian Sea Power" (*CJ,* 42, 86). A new view on ancient politics is presented by A. P. Dorjahn in his *Political Forgiveness in Old Athens* (Northwestern Univ. Studies in the Humanities, No. 13. Northwestern Univ. Press). J. A. O. Larsen, in "The Acharnians and the Pay of Taxiarchs" (*CP,* 41, 91), shows that the taxiarchs were unpaid as pseudo-Xenophon says, in that they received no regular salary, but were paid, as Aristotle says, in that they received money while on active service. H. Hill has an article on "Roman Revenues from Greece after 146 B. C." (*CP,* 41, 35). A. T. Geoghegan offers a sociological study in *The Attitude towards Labor in Early Christianity and Ancient Culture* (Cath. Univ. of Amer. Studies in Christian Antiquity, No. VI. Cath. Univ. of Amer. Press, 1945).

An interesting study in classical tradition is Z. S. Fink's *The Classical Republicans, An Essay in the Recovery of a Pattern of Thought in Seventeenth Century England* (Northwestern University Studies in the Humanities, No. IX. Northwestern Univ. Press, 1945).

RELIGION

Studies in Greek religion are significant both for the light they shed on Greek civilization and for their illumination of universal religious experience and anthropology. The work of the year in this field is concerned with various phases of the subject. C. Bonner in "Harpocrates (Zeus Kasios) of Pelusium" (*Hesp.,* 15, 51) discusses a sacred image of Zeus Kasios mentioned by Achilles Tatius in *Clitophon and Leucippe,* furnishing further evidence from four unpublished gems, three of them from Egypt. The same author writes on "Magical Amulets" (*HTR,* 39, 25). W. C. Greene, in "The Return of Persephone" (*CP,* 41, 105), shows that Persephone spent the summer in the underworld and returned to earth with the autumn flowers. The Eleusinian cult, he points out, was based on an autumn festival. D. K. Hill in "Material on the Cult of Sarapis" (*Hesp.,* 15, 60) throws light on this cult from six objects connected with it in the Walters Art Gallery in Baltimore.

In "Atheism among the Greeks" (*PAPA,* 76, xxxiv), W. W. Hyde discusses what constitutes atheism and gives a general account of its history. G. E. Mylonas, in "The Eagle of Zeus" (*CJ,* 41, 205), shows that an association connected with the Eagle of Zeus was established early in the historic period at the sanctuary of Zeus Lykaios in Arcadia and thence spread to the rest of Greece. E. Riess has an article entitled "What Is Greek Folk Religion?" (*BPIASA,* 3, 355). A slightly fanciful monograph entitled *The Genesis of Human Offspring: A Study in Early Greek Culture* (Smith College Classical Studies, 1945) discusses the Greek belief in the non-biologic origin of children and compares it with the Australian food-gatherers' (Arunta) ceremonies and beliefs.

ART AND ARCHAEOLOGY

The year's work in this field showed an unfortunate lack of material in the Minoan-Mycenaean period. With more stable conditions prevailing in the eastern Mediterranean, we may look forward with enthusiasm to new discoveries in this very important branch of archaeology. The various departments of classical archaeology are well represented. R. Pfister and L. Bellinger have completed *The Excavations at Dura-Europos Conducted by Yale University and the French Academy of Inscriptions and Letters. Part II, The Textiles* (Yale Univ. Press, 1945). S. and G. Weinberg are the authors of "Corinth: The Ancient City Revealed" (*CJ*, 42, 67), commemorating the fiftieth anniversary of excavations on that site. W. B. Dinsmoor, in "The Athenian Treasury (at Delphi) as Dated by Its Ornament" (*AJA*, 50, 86), believes the correct date to be 507 B. C., drawing his conclusions from structural, sculptural, and ceramic evidence.

R. L. Scranton is the author of an article entitled "Interior Design of Greek Temples" (*AJA*, 50, 39). G. P. Stevens, in "Architectural Studies Concerning the Acropolis of Athens" (*Hesp.*, 15, 73), discusses certain hitherto neglected aspects of the architecture of the Acropolis. The same author's "The Northeast Corner of the Parthenon" (*Hesp.*, 15, 1) is a study of the ancient monuments northeast of the Parthenon based on Pausanias' account and on archaeological evidence. A. E. Raubitschek and G. P. Stevens in "The Pedestal of the Athena Promachos" (*Hesp.*, 15, 107) hold that the inscriptions on the pedestal referred to Marathon or the Persian wars in general and that battle trophies were arranged around it.

The Figure of Dionysus in the Siphnian Frieze is the title of a monograph by V. F. Lenzen (Univ. of Cal. Pubs. in Class. Arch. Vol. III, No. 1. Univ. of Cal. Press). The tradition of Greek architecture is represented by T. and S. Hamlin's *Greek Revival Architecture in America* (Oxford Univ. Press, 1944).

In the field of ceramics the following should be mentioned: G. H. Chase, "Two Sixth-Century Attic Vases" (*BMFA*, 44, 45); V. Grace, "Early Thasian Stamped Amphoras" (*AJA*, 50, 31); S. P. Karouzou, "Choes," a study of this type of vase from the artistic and religious point of view (*AJA*, 50, 122); M. T. Milne, "Perseus and Medusa on an Attic Vase" (*BMMA*, 4, 126); A. D. Ure, "Some Boeotian Palmette Cups" (*Hesp.*, 15, 27); P. N. Ure, "Ring Aryballoi" (*Hesp.*, 15, 38); and E. Vanderpool, "Some Black-Figured Pottery from the Athenian Agora" (*Hesp.*, 15, 120). Two articles of G. M. A. Richter are "A Greek Bronze Vase" (*BMMA*, 4, 184) and "Two Archaic Bronze Statuettes" (*Ibid.* 4, 249).

G. H. Chase in "An Archaic Greek Sphinx in Boston" (*AJA*, 50, 1) discusses the colors used on the statue and dates it about 530 B. C. (Cf. *BMFA*, 43, 24 for same author's article on the same statue). Two important articles on Graeco-Persian art are H. Francfort's "Achaemenian Sculpture" (*AJA*, 50, 6), in which he says that "the Greeks and Persians are jointly responsible for the novel features of Achaemenian sculpture" in the late sixth and early fifth centuries B. C.; and G. M. A. Richter's "Greeks in Persia" (*AJA*, 50, 15), a more detailed study of the Greek influence in Achaemenian art. Mention should be made of V. E. Simkhovitch's "Some Fifth-Century Greek Heads," containing photographs of three heads in his private collection, first published at this time (*AJA*, 50, 81).

C. Edson in "A Note on the Macedonian Merides" (*CP*, 41, 107) shows by evidence of coins that Larsen in his article "Representation and Democracy in Hellenistic Federalism" (Cf. THE AMERICAN YEAR BOOK, 1945, 971) was right in stating that the four Macedonian *merides* existed down to the Flavian period. B. L.

Trell in *The Temple of Artemis at Ephesus* (Amer. Numismatic Soc'y., Numismatic Notes and Monographs, No. 107, 1945) throws new light on the ancient temple by means of numismatics. E. Jastrow, in "Terracotta Reliefs in American Museums" (*AJA*, 50, 74), shows Greek influence through Magna Graecia on Roman art. D. K. Hills' *Fashions of the Past: Ancient Greek Dress* contains illustrations from the Walters Art Gallery (Baltimore, 1945). R. P. Blake, W. Koehler, and P. J. Sachs are the authors of *Late Classical, Early Mediaeval, and Byzantine Art* (Dumbarton Oaks Papers, No. 3, Harvard Univ. Press).

INSCRIPTIONS AND PAPYRI

This is one of the most important fields of modern scholarship as it recovers new and hitherto unknown facts about ancient Greece. It is, of course, one of the first branches to be affected by war and post-war conditions. F. W. Householder, Jr. and D. W. Prakken published "A Ptolemaic Graffito in New York" (*TAPA*, 76, 108), an edition and commentary of a Greek graffito of the late third century, consisting of 18 lines in elegiac couplets, probably dedicated to the leader of an elephant expedition on the Trogodytic coast. M. T. Mitsos contributes "An Inscription from Mycenae" (*Hesp.*, 15, 115) of the first quarter of the fifth century, found in 1933. From the Agora excavations come K. Pritchett's "Greek Inscriptions," 17 inscriptions illustrated and indexed; and B. D. Meritt's "Greek Inscriptions," 61 inscriptions also illustrated and indexed (*Hesp.*, 15, 138 and 169).

H. C. Youtie writes "Critical Notes on Graeco-Roman Ostraka" (*TAPA*, 76, 140), new readings in the texts of ostraka from Karanis in the University of Michigan collection, offered as a critical supplement to the edition of ostraka published by Leiv Amundsen. E. M. Husselman in "Two Literary Papyri from Karanis" (*TAPA*, 76, 117) presents a fragment of a speech by Isocrates and one of Demosthenes. A good article on the subject of papyri is H. J. Wolff's "Papyrology: Its Scope, History, and Achievements" (*BPIASA*, 3, 384). Also to be noted in this field is *The Journal of Juristic Papyrology* edited by R. Taubenschlag under the auspices of the Polish Institute of Arts and Sciences in America.

In "The Pyloroi of the Acropolis" (*TAPA*, 76, 104), A. E. Raubitschek discusses three inscriptions throwing light on the Pyloroi, the guards of the Acropolis. Important in the study of manuscripts is K. and S. Lake's *Dated Greek Minuscule Manuscripts to the Year 1200. Indices, Volumes I-X.* (Boston, 1945, Amer. Acad. of Arts and Sciences).

MISCELLANEOUS

Ancient medicine is represented by E. J. and L. Edelstein's *Asclepius, A Collection and Interpretation of the Testimonies* (2 vols., The Johns Hopkins Univ. Press, 1945). R. Walzer is the author of *Galen on Medical Experience*, Arabic version with English translation and notes (Oxford Univ. Press, 1944). E. Evans, in "Galen the Physician as Physiognomist" (*TAPA*, 76, 287), states that Galen probably became interested in physiognomy at Smyrna where Polemo, the physiognomist, had died shortly before his arrival there.

W. H. Stahl, in "The Greek Heliocentric Theory and Its Abandonment" (*TAPA*, 76, 321), holds that the abandonment of the heliocentric theory of Aristarchus and others was a good thing for the science of astronomy, for Alexandrian scholars made wide researches and accumulated many valuable data based on the geocentric system, without which astronomical science might have been retarded by a century. He adds that the heliocentric theory was mathematical and philosophical rather than empirical.

L. Alexander is the author of "Greek and Roman Artillery" (*CJ*, 41, 208), and D. K. Hill of *Soldiers in Ancient Days*, an illustrated monograph on military equipment from ancient art in the Walters Art Museum (Baltimore). In *The Etude*

(63, 489) is an article by F. de Horvath on "The Greeks and Musical Therapeutics." N. Lewis has an article on the meaning of various terms used in loan contracts (*TAPA,* 76, 126).

In the field of the Greek dance is a monograph by D. K. Hill entitled *The Dance in Classical Times* with illustrations from the Walters Art Gallery (Baltimore, 1945). L. B. Lawler continues her studies in the Greek dance in "Pindar and Some Animal Dances" (*CP,* 41, 155), stating that P's Tenth Pythian shows the presence of comic animal dances in the cult of Apollo as early as 498 B. C. and probably earlier. Miss Lawler also has two articles explaining technical terms in the terminology of the dance (*TAPA,* 76, 59 and *AJP,* 67, 67).

SEMITIC LANGUAGES AND LITERATURES

By G. Douglas Young
Faith Theological Seminary

GENERAL

Now for the first time in a number of years European and American scholarship is again coming together. This interplay will be wholesome for the advancement of Semitic studies. Perhaps more significant even than this is the fact pointed out by E. A. Speiser (Presidential Address at the April 1946 Annual Meeting of the American Oriental Society, "Oriental Studies and Society," *JAOS** for September) that the war brought a meeting of East and West all along the line. Research in these fields was a basic necessity since the Near East has resumed its former role as one of the keys to world power. Knowledge of its states and provinces is vital; hence a heavy burden of responsibility now rests on Oriental studies.

Of general interest will be the "Catalogue" of the material in the Cleveland Public Library made by F. E. Sommer and published in *JAOS* for September. The index of articles and archaeological reports, together with a list of books, articles, and reprints noted in the Bulletins, numbers 81-100, is published in *BASOR* for October.

ARCHAEOLOGY

Because of the bearing on important problems confronting Semitic scholars, reference should be made to material of a strictly archaeological nature. Brigadier E. J. Ross in *JNES* for October describes "A Chalcolithic Site in Northern Baluchistan," to wit, Rana Ghundai. Important prefatory remarks are made by Donald E. McCown, who notes the interconnections of the civilizations of this early period. The pottery of the site is illustrated. Nelson Glueck contributes two books and three important articles on the archaeology of the Jordan area with his *The River Jordan; The Other Side of the Jordan;* and "Transjordan" in *BA* for September; "Band-slip Ware in the Jordan Valley and Northern Gilead" in *BASOR* for February, a discussion of the distribution of the typical Early Bronze I pottery, with plates; and "A Settlement of Middle Bronze I in the Jordan Valley" in *BASOR* for December (1945), constituting a discussion of Tell Umm Hamâd el-Gharbī, with plates of the pottery. J. L. Kelso and J. Polin Thorley have collaborated in *BA* for December (1945) to produce a discussion of "Palestine Pottery in Bible Times."

SEMITIC PHILOLOGY

F. R. Blake presents the fourth in his "Series in Semitic Grammar" in *JAOS* for September. Here he discusses the "emphatic" consonants; the vocalization of the pretonic open syllable in Hebrew; and the Aramaic *z* for Semitic *z*, and *d*. In *JBL* for March the same writer discusses also the "Form of Verbs After Waw in Hebrew."

---

* Abbreviations used in this article: *JAOS, Journal of the American Oriental Society; JBL, Journal of Biblical Literature; JNES, Journal of Near Eastern Studies; JQR, Jewish Quarterly Review; BA, Biblical Archaeologist; BASOR, Bulletin of the American Schools of Oriental Research.*

CUNEIFORM STUDIES

Two important books have appeared in this field. Alexander Heidel's *The Gilgamesh Epic and Old Testament Parallels* presents us with a new translation of the Epic and several related myths together with comparisons with the Old Testament. There are two large chapters on "Death and the Afterlife" and "The Story of the Flood." O. Neugebauer and A. J. Sachs have added another contribution along mathematical and astronomical lines with their *Mathematical Cuneiform Texts.*

Albrecht Goetze in *JAOS* for December (1945) gives us "The Vocabulary of the Princeton Theological Seminary" (P.T.S.1) with a copy, transliteration, and commentary of this new text. In *JNES* for July the same author makes another contribution in his "Number Idioms in Old Babylonian." On a related theme in the same issue is A. J. Sachs' "Notes on Fractional Expressions in Old Babylonian Mathematical Texts." T. J. Meek adds to his contributions on Semitic syntax with "The Asyndeton Clause in the Code of Hammurabi" in *JNES* for January. In the field of interpretation several valuable contributions are to be found. A. Leo Oppenheim, in "Assyriological Gleanings IV," to be found in *BASOR* for October, shows that there exist scattered references to a Mesopotamian Harvest Song comparable to those of Egypt, Ugarit and the Greeks. Thorkild Jacobsen in *JNES* for April presents "Sumerian Mythology: A Review Article," and in *BASOR* for April another extended review, that of Dr. Kramer's *Sumerian Literary Texts for Nippur,* under the title "New Sumerian Literary Texts." Julius Lewy discusses "The Late Assyro-Babylonian Cult of the Moon and Its Culmination at the Time of Nabonidus" in the *Hebrew Union College Annual* (Vol. XIX).

In *JAOS* for September, R. G. Kent, in his "The Oldest Persian Inscriptions" concludes that the Old Persian syllabary was used for inscriptions of Cyrus the Great, but that there is no evidence that it was used at an earlier date. "The Vocative in Hittite" is the basis of a discussion by H. G. Guterbock (Ankara) in *JAOS* for December (1945).

EGYPTIAN

In *JNES* of January is another important contribution from the prolific pen of W. F. Albright, "Cuneiform Material for Egyptian Prosography 1500-1200 B.C.," being a list of Egyptian names in cuneiform with an excursus on accent and vowel quantity in New Egyptian. We find again material from the pen of Hermann Ranke in *JAOS* for December (1945) "A Late Ptolemaic Statue of Hathor from Her Temple at Dendereh," with a discussion and translation of the inscription, together with a copy of the text itself. Kurt Pflüger gives us "The Edict of King Haremhab" with text, translation, commentary and notes in *JNES* for October. Of wide interest to Egyptologists will be the full bibliography of a great Egyptologist, George Steindorff, compiled in commemoration of his 84th birthday by James H. Breasted, Jr., and published in *JAOS* for March.

Egypt is well represented in books by the publication of the third edition of J. H. Breasted, *History of Egypt;* of the second edition of W. S. Smith, *Ancient Egypt as Represented in the Museum of Fine Arts* (Boston), and the late G. A. Reisner's *History of the Giza Necropolis,* Vol. I.

CANAANITE

Two outstanding contributions were made during the year by T. H. Gaster, two by Julian Obermann, and one by H. L. Ginsberg in the field of Ugaritic studies. In *BASOR* for February, Gaster discusses II AB with text and translation, "A King Without a Castle: Baal's Appeal to Asherat"; and in *JAOS* for March is his "A Canaanite Ritual Drama: The Spring Festival at Ugarit." Gaster concludes that the latter is nothing but the order of service for the Canaanite festival of first fruits in the spring, the prototype of the Israelitic Feast of Weeks (Pentecost) and that it includes the libretto of a sacred pantomime then performed. In a supplement to *JAOS,* Julian Obermann presents a text, introduction, commentary, and discussion of *How Daniel Was Blessed with a Son: An Incubation Scene in Ugaritic.* In *JBL* for September in "Sentence Negation in Ugaritic" he presents evidence for the negative use of *l.* A very important contribution to this field is Ginsberg's *The Legend of King Keret: A Canaanite Epic of the Bronze Age,* with text, introduction, translation, copious notes and a bibliography of old and new publications on the Keret texts.

B. Maisler in *BASOR* for April in "Canaan and the Canaanites" presents a discussion of the relation of the name of the land to the word *kinaḫḫu* in the Akkadian dialect of Nuzi and to the word *Kyn'nw* in Egyptian.

SOUTH SEMITIC

"The Present State of Ethiopic Linguistics" is discussed by Wolf Leslau in *JNES* for July. From the pen of the same writer two other contributions to this field have come: his "Bibliography of the Semitic Languages of Ethiopia," published for the New York Public Library in pamphlet form, and his "Linguistic Observations on a Native Yemenite Document" in *JQR* for January. Nabia Abbott in *JNES* for July presents us with "An Arabic Papyrus in the Oriental Institute: Stories of the Prophets." Other texts have been published by Anis Frayha and the team of H. H. Spoer and E. S. Haddad. Frayha's "New Yezīdī Texts from Beled Sinjar, Iraq," is a history of the discovery of the texts with a translation and commentary. A list of the sparse references in Arabic literature to 'Adi and the Yezīdīs as well as a short history of the Ju'fī family is included. The texts are those of the two sacred books, *Kitāb al-Jalwah* and *Misḥaf Resh,* poems ascribed to 'Adi and short stories. These are published in *JAOS* for March. In the same publication for June Spoer and Haddad present Part II of their "Poems by Nimr Ibn 'Adwán, XXI to XLIV'" with text, translation and commentary. (Part I in *JAOS,* January 1945.) Mehmet Aga-Oglu gives a study of the terminology of Islamic Art in *JNES* for October in "The Origin of the Term MINĀ and Its Meanings." "On Suicide in Islam" by Franz Rosentahl, *JAOS* for September, is a discussion of the religious and non-theological opinions concerning this question, together with the reported cases chronologically presented. P. B. Cornwall in *BASOR* for October enters the lists "On the Location of Dilmun." He concludes with those who hold it to be the island of Bahrein, but adds that at least during some periods it included a stretch of territory on the nearby Arabian mainland as well. From the Persian Gulf another of the Himyaritic Inscriptions has come and is discussed by F. V. Winnett in *BASOR* for April.

BIBLICAL

Contributions to the Biblical field include historical, textual, and interpretative studies. Jack Finegan's *Light from the Ancient Past* describes many valuable contributions to our knowledge of the life, literature, and archaeology that constitute the background of the Hebrew-Christian religion. *Re-Discovery of the Old Testament* was contributed by H. H. Rowley.

Two especially noteworthy historical contributions come from the pen of W. F. Albright, "The Chronology of the Divided Monarchy of Israel" (a complete re-examination of the problems, together with tables), in *BASOR* for December (1945), and "A Brief History of Judah from the Days of Josiah to Alexander the Great" in *BA* for February. A history of a later period is presented by E. Taeubler in *JQR* for July, "Jerusalem 201 to 199 B.C.E. on the History of a Messianic

Movement." C. Umhau Wolf discusses the "Terminology of Israel's Tribal Organization" and concludes that the terms can not be exactly defined. C. C. Torrey in *JAOS* for March in "Medes and Persians" presents the thesis that the entire Israelite scheme is a creation of patriotic and religious fervor which stands by itself and can not be fitted into any Gentile history. Elias J. Bickerman of the École Libre des Hautes Études, on the other hand, in *JBL* for September points out that "The Edict of Cyrus in Ezra I" is a genuine edict of Cyrus which had the same mode of promulgation, by herald and through poster, as the Roman edictum. S. Zeitlin presents Part I of his "An Historical Study of the First Canonization of the Hebrew Liturgy" in *JQR* for January. "The Dissident Laity in Early Judaism" is discussed by S. H. Blank in the *Hebrew Union College Annual* (Vol. XIX).

A number of textual studies has appeared. A. Wikgren in *JNES* for July discusses "Two Ostraca Fragments of the Septuagint Psalter." "The Septuagint: Its Use in Textual Criticism" is presented in *BA* for March from the pen of H. M. Orlinsky. *"Semel Ha-Qin'ah Ha-Maqneh:* Ezekiel 8:3 & 5" is discussed by H. Torczyner in *JBL* for September; *"Hā-Rōqclīm* for *Hā-Rēqīm* in II Samuel 6:20" by Orlinsky in *JBL* for March; and Frank North attempts to reconstruct the text in his "The Oracle Against the Ammonites in Jeremiah 49:1-6" in the same issue of *JBL.*

In *JNES* for January, O. R. Sellers discusses "Limits in Old Testament Interpretation," and Wm. A. Irwin the "Poetic Structure in the Dialogue of Job." In the following issue of *JNES* is presented G. E. Wright's "The Literary and Historical Problem of Joshua 10 and Judges 1." "Moses and the Sinai Inscriptions" is the basis of the discussion by H. G. May in *BA* for December (1945). Psalms 23 and 29 receive important consideration, the first by J. Morgenstern in *JBL* for March and the second by T. H. Gaster in *JQR* for July. The former is a discussion of date, authorship, speaker, text, meter and unity of thought, the latter presents the thesis that the Psalm is a typical "hymn of laudation." Morgenstern discusses two other Psalms, "Psalm 8 and 19A" in the *Hebrew Union College Annual* (Vol. XIX). "The Second Psalm" receives the consideration of Isaiah Sonne in the same book.

Though perhaps peripheral to this field, there is another beautifully illustrated book that will be of interest to many, F. Landsberger's *Rembrandt, the Jew and the Bible.*

SLAVIC LANGUAGES AND LITERATURES

By Anthony J. Klancar
Editor and Writer

GENERAL

Slavic Studies, particularly the Russian field, have made tremendous progress in the last two years. In a recent survey, conducted by *The New York Times,* may be found impressive data regarding this new interest in Slavic. At the time of Pearl Harbor, only 19 American institutions of higher learning were offering courses in Russian. Today the number is well over 110. This interest is not merely a temporary, wartime product. Since V-J Day there has been a growth of 35 per cent in the number of institutions offering Russian. About 25,000 Americans are now studying Russian in schools and colleges in all parts of the country. Educators now believe that Russian will take a permanent place among college courses and will compete with such traditional subjects as French, German, and Spanish.

Columbia University offers more courses in Russian than at any other time in its history. It offers a well-rounded program of subjects in history and government in its Russian Institute, the only school of its kind on the graduate level which prescribes a two-year program touching on all phases of Russian life. Twelve lecture courses and research seminars are given in Russian history, economy, government, law, foreign relations, official ideology, and literature. Yale University has introduced a program of Russian studies for undergraduates, stressing the relation of the U.S.S.R. to the Western and Far Eastern world. A specialized course in scientific Russian is now offered at the University of Chicago. The University of Washington (Seattle) reports an unprecedented increase in the number of students in Russian language, history, and literature.

Several institutions, such as Harvard, California, and Columbia, have established full-fledged Slavic departments, which offer courses in many Slavic subjects. The Department of Slavic Languages in Columbia University may well be taken as a model for other departments. Together with Harvard University and the University of California, Columbia may boast of having one of the oldest Slavic departments in the United States. Over a period of years, several outstanding American and European Slavicists have been added to its growing staff. Foremost among these is Ernest J. Simmons, head of the department and authority on Tolstoy and Pushkin. Roman Jakobson, Masaryk professor of Czechoslovak studies, has a worldwide reputation as a Slavic philologist. Equally distinguished is Karl H. Menges, one of the few Altaicists in the United States. Clarence A. Manning was one of the earliest American scholars to teach in the Slavic field; he is an outstanding authority on Ukrainian literature and a pioneer in many other Slavic fields. In the United States, Arthur P. Coleman, George R. Noyes of the University of California, and Mme. Elena Mogilat, a teacher of Russian at Columbia University, are pioneers in Polish studies and the general Slavic field.

Probably the greatest single factor in the development of Slavic Studies in the United States today is the Rockefeller Foundation. In 1946, the Foundation made a grant of over $200,000 to Stanford University's Hoover Institute, which is to be used in awarding fellowships in Slavic Studies, mainly in the fields of the humanities and the social sciences.

BIBLIOGRAPHY

To the student of Russian and other Slavic languages, the Library of Congress offers a collection of more than 200,000 volumes, the largest collection of its kind in the Western Hemisphere. Details of the collection are described by Sergius Yakobson in "The Library of Congress, Its Russian Program and Activities" *(*ARSU* 7, No. 4, 51-66).

Another famous collection is discussed in general terms by Dimitri von Mohrenschildt in "Bibliography: Darmouth Collection of Historical Material on the Russian Revolution" (*RR* 6, No. 1, 105-112). Both of these articles are valuable as introductions to historical and cultural sources necessary for any study of Soviet Literature coming out of the Revolution of 1917-1921. Joy Moss' "Books on Soviet Culture" (*ARSU* 7, No. 3, 51-57) is a useful cultural bibliography covering briefly the most important books in English on the theatre and cinema, literature, etc. A good, general list of all books and articles published here and abroad is "Books and Articles on Russia Published in 1945" (*RR* 5, No. 2, 116-129). In the Polish field, Arthur F. Coleman and Marion M. Coleman have contributed in their annual, *Mickiewiczana* (41-54), more additions and corrections to their tentative bibliography of translations into English from the Polish of Adam

---

* Abbreviations used for periodicals are: *ARSU—American Review on the Soviet Union, ASEER—American Slavic and East European Review, NM—New Masses, PMLA—Publications of the Modern Language Association, PR—Polish Review, RR—Russian Review, SR—Slovak Review, UQ—Ukrainian Quarterly.*

Mickiewicz, found in their *Adam Mickiewicz in English* (1940). An indefatigable bibliographer of Slavic, Mrs. Coleman gives a brief history of Bulgarian studies in England and America in her "Bulgarian Materials in English" (*Comparative Literature News-Letter* 4, No. 5, 35-36).

Reviews of current books on Slavic languages and literatures may be found in all of the periodicals mentioned in this article, but special mention must be made of the general bibliography of work done by American scholars, which is published in the *PMLA* supplement for March. For a current list of books and articles on Soviet Russia see *The American Review on the Soviet Union.* Specialized bibliographies may be found in the *Ukrainian Quarterly* and the *Slovak Review,* a new publication devoted to a little-known Slavic field.

Increasing in usefulness and authoritativeness, the *Bulletin of the American Association of Teachers of Slavic and East European Languages* is the best all-round source of information on any Slavic subject. It contains reports on progress made in the Slavic teaching field, materials for teaching Slavic languages, reviews of recent important articles and books published in Europe and the United States, special articles on the history of Slavic Studies, on literature, and language, etc. by experts in the field, as well as news of work in progress by specialists in various other fields. The *AATSEEL Bulletin* is a quarterly edited by Marion M. Coleman and published in mimeograph form for members of the American Association of Teachers of Slavic and East European Languages.

SLAVIC—GENERAL

One of the most important studies in the Slavic field to appear in recent years is Henri Grégoire's "L'Origine et le Nom des Croates et des Serbes" (*Byzantion* 17, 1944-45, but published in 1946, pp. 88-118). Professor Grégoire makes a sensational discovery as regards the origin and the name of the Serbs and Croats. He bases his thesis on the Greek texts generally printed under the Latin title *De administrando imperio,* written by Emperor Constantine VII (950 A.D.); the story of Chrobatos, leader of the Croat migration, also called Koubrat or Kouvrat, found in the works of the Egyptian John of Nikiou and the Byzantines Nicephorus the Patriarch and Theophanes the Confessor, historians of the 7th and 9th centuries. From this latter source we learn that the name of the Croat leader is the same, as in the previous reference the date is identical, as the Byzantine emperor Heraclius; his first successor Kouvrat revolts against the Avar empire, makes friends with the Byzantines, and has his people baptized.

However, the most important fact uncovered by Professor Grégoire is that Kouvrat was in reality a Bulgarian chieftain, not a Slav. This fact is fully confirmed by a third source, the so-called royal roster of Bulgaria which lists for the first half of the 7th century a Bulgarian king or khan named Kurt Kouvrat. There is still a fourth, parallel document, the story of the "Miracles of St. Demetrius," the patron saint of Thessalonica. Here again, at the same date, figures a Bulgarian chieftain called Kouber or Kouver (another form of the same name) who is said to have led a revolt of several tribes, mainly Bulgarians and Slavs, against the Avars and afterwards crossed the Danube, got in touch with the imperial authorities and settled his Slavic subjects somewhere south of the Danube in Macedonia.

On the same high level of scholarship is Karl H. Menges' "Etymological Notes on Some *Păčănăg* Names" (*Byzantion,* 256-280). Professor Menges brings a vast knowledge to his study of *Păčănăg* (Turkic) loanwords in Old Church Slavonic. So too the late Samuel H. Cross' last published article "Primitive Civilization of the Eastern Slavs" (*ASEER* 5, Nos. 12-13, 51-87) is a monument to his great scholarship.

RUSSIAN LANGUAGE

In order to understand properly and fully Russia's cultural and scientific achievements we must study these at their source in Russian, according to Dederich Navall's "Why Learn Russian" (*Modern Language Journal,* 30, No. 6, 355-57). Some interesting arguments as to why learn Russian may be found in Marion M. Coleman's "Twenty-Five Years of Teaching Russian at Columbia" (*RR* 6, No. 1, 84-90), a fine tribute to Mme. Elena Mogilat, a wonderful teacher and a pioneer in teaching spoken Russian.

Alfred Senn continues in "College Russian: Objectives and Methods" (*ASEER* 5, Nos. 12-13, 176-186), a discussion begun by Professor Cross in his "Teaching College Russian." Professor Senn concludes: "The cultural values of a language are contained in its written form. Therefore, the written language must be the primary aim of all foreign language teaching . . ." As an example of the spoken language method see Lesnin, Bloomfield, and Petrova's *Spoken Russian* (Holt), which is written according to new criteria set up for the Army Specialized Training Program by the American Council of Learned Societies and the Linguistic Society of America.

Many revised editions of old grammars are now available. Of these, Agnes Jacques' *A Russian Primer* (Packard) is by far one of the best all-round grammars and readers. The treatment of verbs is very good, and there is some excellent material for readings from science and technology. Here we may also mention J. W. Perry's *Chemical Russian Self-Taught* (Chemical Engineering Publishing Co., Easton, Pa.). Joseph E. Harsky's *A Workbook in Russian* (Pitman) is a pioneer attempt. For use with Bondar's *Simplified Russian Method,* it applies the latest methods in language teaching.

RUSSIAN BIOGRAPHY

Tolstoy.—A major work of American literary scholarship, Ernest J. Simmons' *Leo Tolstoy* (Little, Brown), brings Tolstoy back to life in an account of nearly every year of the great Russian's life, tracing the evolution of his art and thought. Professor Simmons' account of the family crisis, which so embittered and drove Tolstoy out of his home during the last years of his life, is given accurately and in full for the first time. Through Professor Simmons we come to a renewed appreciation of Tolstoy's great vitality and of his health and tenderness. We have here a definitive, incomparable Tolstoy biography.

Gorky.—In contrast, we have Alexander Roskin's *From the Banks of the Volga* (Philosophical Library), dealing with the life of Maxim Gorky, one of the most influential writers of Modern Russia. First published in Moscow in 1944, Roskin's biography is an example of Soviet biography at its worst. More profitable reading is Maxim Gorky's *Reminiscences* (Dover), a great journalist's memories of Tolstoy, Chekhov, Andreyev, Blok, etc.—men who were of Titan size in a period of Titans.

Dostoevski and Others.—Henry Troyat's biography, *Firebrands: The Life of Dostoevski* (Roy Publishers), is a documented record of how the Russian novelist conceived and created his heroes, as well as an interpretation of his major works. On the other hand, Lydia Lambert's *Pushkin, Poet and Lover* (Doubleday) is a romantic, fictionized biography of an early 19th century Russian poet who deserves better treatment. Fan Parker deals otherwise with Vsevolod Garshin (King's Crown Press), best known to his English readers for his stories, *Four Days.* A very useful book, Valentine Snow's *Russian Writers* (International Book Service) covers the period from the Age of Catherine II to the October Revolution in 1917 in the lives and works of some 200 Russian authors, alphabetically arranged.

RUSSIAN DRAMA

According to Ernest J. Simmons, writing on "Soviet Drama and the War" (*New Republic* 114, No. 17, 625-7), the chief fault in Soviet dramas is their lack of "sharp dialogue and professional mastery," qualities which are much admired in our own American dramas. Professor Simmons was discussing a recent collection of

Seven Soviet Plays. This lack may also be seen in Alexander Bakshy's *Soviet Scene: Six Plays of Russian Life* (Yale Univ. Press). The translator chose these plays as a cross section of Soviet dramatic tastes from the 1917 Revolution to the Second World War. All are written as Soviet propaganda-drama history and deal with such themes as the Civil War (Trenyov), reconstruction period following the Revolution (Pogodin), Trans-Siberian Railway (Afinogenov), marriage and family (Shkvarkin), old values redeemed (Ilyenkov), and the best in the lot, Marshak's *Twelve Months,* a lyrical fantasy on the old Christmas pantomime model.

For an insight into how a Soviet playwright creates, we must read Maxim Gorky's "A Letter to Slanislavsky" (*NM,* LIX, No. 12, 6-10), in which Gorky builds up a play before your very eyes, tapping the "untouched strata of personal impressions which lie in the soul of every man." In his devastating article "Looking at the American Theatre" (*NM,* LXI, No. 1, 4-7), Konstantin Simonov compares play production in New York and Moscow and finds that the "almighty dollar" rules the art of our American theatre. "A theatre where the actors do not work for profit or cheap popularity is an excellent manifestation." The recent reorganization of the Soviet theatre is discussed in Norris Houghton's "National Theatres of the World" (*Theatre Arts* 30, 533-37).

RUSSIAN POETRY

Pushkin.—Waclaw Lednicki is one of the greatest of Pushkinists. In his "Polish Scholarship and Pushkin" (*ASEER* 5, Nos. 12-13, 88-92), Roman Jakobson discusses the contributions made by Polish Pushkin scholars in the two-volume work *Pushkin 1837-1937,* edited in 1939 by W. Lednicki. Read also W. Lednicki's "Bits of 'Table-Talk' on Pushkin" (*ASEER* 5, 93-110), in which Lednicki contributes some new ideas on the polemic of Pushkin with Mickiewicz that will go down in the history of Russian literature. Criticism of Pushkin is one thing, but appreciating him is another. Alexander Fredericks tries to explain the obstacles in the way of European and American appraisal of Pushkin in a stimulating article called "Pushkin for Americans" (*RR* 5, No. 2, 83-89). Pushkin's poetry is untranslatable because he was a creator of language and the portrayer of the unfathomable Russian heart.

Gumilev.—Two anniversary pieces on Gumilev, a great master of modern Russian poetry, have come from the pens of Leonid I. Strakhovsky and Gleb Struve. According to Professor Strakhovsky, "Nicholas Gumilev" (*RR* 6, No. 1, 37-42) was master of a school of poetry, the Acemeism, and an influential teacher of poetic technique. In his piece, "Blok and Gumilyov" (*Slavonic Review* 25, No. 64, 176-180), Gleb Struve says these two had little in common although they were contemporaries in a country upheaved by war and revolution.

RUSSIAN CRITICISM AND FICTION

Gorky.—Divergent interests and tastes are shown in the great mass of literary criticism and fiction that appeared in 1946. Maxim Gorky's first novel *Orphan Paul* (Boni & Gaer) commemorates an important event in Soviet Literature. Included in this volume is Gorky's essay on "How I Became a Writer," also found in *New Masses* (Vol. LXI, No. 7, 12-15; No. 8, 15-19). Through this essay are glimpses of Gorky's early development, his youthful reading, his own confession of the influence of foreign authors, the reason why he wrote about tramps, and his advice to young Soviet writers.

Turgenev.—What remains permanent and imperishable in Turgenev is the romantic appeal of his art and imagination. So says William H. Chamberlin in "Turgenev: The Eternal Romantic" (*RR* 5, No. 2, 10-23).

Pechorin.—Lermontov's *The Hero of Our Times* (Pechorin) is the subject of Clarence A. Manning's "Lermontov and the Character of Pechorin" (*Modern Language Quarterly* 7, 93-104). One of the first novels in

Russian literature to analyze psychologically a contradictory character, the book caused Lermontov's critics to claim Pechorin's character as the author's own.

Dostoevski.—Hans Kohn devotes a chapter (V) in his *Prophets and Peoples* (Macmillan) to Dostoevski as spokesman of the Russians, while Mischa H. Fayer discusses the same author as a factor in Gide's development in *Gide, Freedom and Dostoevski* (Lane Press).

Historical Novels.—Michael Karpovich's "Soviet Historical Novel" (*RR* 5, No. 2, 53-63) gives a general outline of Soviet fiction from the viewpoint of subject matter and the author's general approach in the novels of Chapygin, Tynyanov, Alexis Tolstoy, Kostylev, Borodin.

Family Life Novels.—Drawing upon Soviet literature as one source of her data, Vera Alexandrova traces, in "The Soviet Family" (*RR* 5, No. 2, 74-82), the downfall of the old Russian family, the life of the new Russian woman, love as "naked physiology," the child as a being with feelings. Compare family life in the following. Philp Rahv's *The Short Novels of Tolstoy* (Dial Press) includes eight shorter pieces, among which are "The Cossacks" and "Hadji Murad," two of the greatest stories Tolstoy ever wrote.

INFLUENCE OF AMERICAN AUTHORS IN RUSSIA

From Robert Magidoff's "American Literature in Russia" (*Saturday Review of Literature* 29, No. 44, 1-11, 45-46), it is learned that Franklin was the first American author to be translated into Russian; Poe and Whitman influenced Russian poetry of the 90's; Mark Twain and Jack London are best loved; Ernest Hemingway is the most eagerly read and the most passionately argued contemporary foreign author. Franklin had an early 18th century admirer in Denis Ivanovich Fonvisin, Russian playwright, writes Nina A. Toumanova in "Franklin and Fonvisin" (*Slavonic Monthly* 2, No. 10, 3-5). Peter Lavrov, the great Russian social philosopher, wrote a critique of Longfellow which reflects "the continuing awareness of America in the thought of the nineteenth-century Russian radicals, an interest hitherto ignored by American scholarship." David Hecht's "Lavrov and Longfellow" (*RR* 5, No. 2, 90-96) should be read.

A lyric poet on a Schillerian model, Zhukovski, single-handed, accomplished the work of popularizing Schiller in Russia. Charles E. Passage's "The Influence of Schiller in Russia 1800-1840" (*ASEER* 5, Nos. 12-13, 111-137) is the first in a series of articles dealing with this subject. While literary ties in Soviet Russia bind strongest with American literature, "Russian Emigré Literature in World War II" by Helen Iswolsky (*RR* 6, No. 1, 69-76) is bound to French literature by ties made by the Paris Group in whom "the twofold trends inspired by the Resistance and by a national feeling are clearly reflected . . ." Russian emigré writers in the United States are mainly absorbed in writing historical novels or literary criticism and belles lettres, unaffected by the war.

UKRAINIAN LITERATURE

Franko's long narrative poem, *Moses,* is one of the great masterpieces of Ukrainian literature. The poem vividly reveals Franko's personal views as to the future of his people and his own conception of the type of leader his people need. Clarence A. Manning analyzes these problems in "The Moses of Ivan Franko" (*UQ* 2, No. 3, 227-235). The third great name in Ukrainian literature is "Lesya Ukrainka" (*UQ* 2, No. 3, 252-64). Percival Cundy says of her in the above article: "Surpassing Franko, she is inferior only to Shevchenko in poetical achievement."

POLISH STUDIES

Polish ranks next to Russian as a taught subject. The reason for this may be found in a booklet *Survey of Polish Teaching in the United States* (Tatra Club), by Francis Bolek and A. P. Coleman. Such articles as Paul R. Selecky's "Polish Studies in Pennsylvania" (*PR* 6, No. 10, 10-11) and Sister Mary Edwina's "The Teaching of Polish in Connecticut" (*PR* 6, No. 11, pp. 13, 15) are important source material for a future history of Slavic Studies in the United States. They show the struggle of large minorities to place their language in high schools and colleges in purely Slavic areas. In Connecticut, for instance, formal teaching of Polish goes back to the latter half of the 19th century. Pioneers in Polish studies in that state have been James Gates Percival, William James Linton, and Arthur P. Coleman.

POLISH LITERATURE

Sienkiewicz.—Although America was not a favorite theme with Poland's writers, nevertheless it entered the Polish novel as a theme as early as 1837. Sister M. Andrea finds, in her illuminating article "America in the Polish Novel" (*Polish-American Studies* 3, Nos. 1-2, 13-20), the American scene depicted in some 16 authors, the most famous among these being Sienkiewicz and Reymont. For example, Sienkiewicz' "The Lighthouse Keeper of Aspinwall" deals with a Polish exile whose patriotism is revived when a copy of Mickiewicz' *Pan Tadeusz* falls into his hands. In "Because of Sienkiewicz" (*PR* 6, No. 10, 4-6), Wladyslaw Reymont tells how, in 1888, he first discovered his famous compatriot, an event which was a turning point in his life, embarking him upon a writing career that brought him world renown as a novelist.

Mickiewicz continues to preoccupy students of Polish poetry. One of the chief sources for becoming acquainted with this poet is *Mickiewiczana*, an annual collection of articles, translations, and other Mickiewicz items. Some little known facts about "Mickiewicz and his American Friends" (*PR* 6, Nos. 6, 6-7, 12, 15) are brought out by Leopold Wellisz. Poland's greatest poet was bound by friendship and ideological closeness with Cooper, Morse, Margaret Fuller, and Emerson to whom Mickiewicz was first to draw attention in France. Especially interesting for students of Polish music should be Lubov Keefer's "The Influence of Adam Mickiewicz on the 'Ballades' of Chopin" (*ASEER* 5, Nos. 12-13, 38-50). Worthy of mention here is Marion M. Coleman's splendid translation of Mickiewicz' "A Polish *Lenore:* The Flight" (*ASEER* 5, 34-37).

Folklore and Legends.—Much of Polish folklore has entered into the poetry of "Kasprowicz—the Poet of the Soil" (*PR* 6, No. 2, 6-7, 14). K. Stywiarski considers him as one of the finest lyric poets of modern Poland. Highlighting certain fundamental Polish attitudes toward liberty and tolerance, the home, death, women, motherhood, God and war, Halina Chybowska's "Wit and Wisdom of the Poles" (*PR* 6, No. 4, 8-9) says truly: "Proverbs are the wisdom of nations." In a volume of Polish legends *Prince Godfrey* (Roy), Halina Gorska gives 12 stories of a splendid Polish hero, "the knight of the star of the nativity."

SHAKESPEARE IN POLAND

For those interested in the Shakespeare influence in world literature, Josephine Calina's "Shakespeare in Poland" (*PR* 6, No. 5, 6-7, 14) should be a revealing item. It is condensed from a 76-page work of the same title, published by the Shakespeare Association (London, 1923).

SLOVAK

A handy booklet on a little publicized subject, Ivan J. Kramoris' *A Chronological Outline of Slovak Literature and History,* covers a period from the sixth century to 1939. Biographer of SS. Cyril and Methodius, the Apostles of the Slavs, Father Cyril J. Potocek writes authoritatively on the relationship between Slovak and Old Church Slavonic in his "The First Written Slovak Language" (*SR* 1, 5-8). A. A. Banik traces "The National Name of the Slovaks" (*SR* 1, 9-18) from *Sloven* through various changes to *Slovak* and *Sloviak.* Slavic literary historians will be interested in Ivan Houdek's study of "Janosik" (*SR* 1, 30-46). Juro Janosik, the Slovak Robin Hood, has been a favorite subject with Polish, Ukrainian, and Russian novelists, poets and folklorists. Houdek traces the Janosik legends through a maze of documentary evidence to prove that Janosik did exist in fact and not only in the imagination of the Slovak peasant. Another publication, P. P. Yurchak's *Slovak's, Their History and Traditions* (Obrana Press, Scranton, Pa.), is excellent for its chapters on the Slovak National Revival and the Slovak Renaissance, a period during which the Slovak literary language saw its greatest development.

YUGOSLAV LINGUISTICS

Few good grammars of Serbo-Croatian exist in English, and Carleton T. Hodges' two-volume *Spoken Serbo-Croatian* (Holt) is a welcome work for all students of Slavic languages. The learning unit consists of basic sentences, word study through inductive grammar, review, listening in to dialogue, conversation, and a finder list. Professor Hodges' "Serbo-Croation Phonemes" (*Language* 22, No. 2, 112-120) should arouse much discussion in linguistic circles. This phonemic description is based on the speech of two informants, both Serbs from Croatia.

YUGOSLAV LITERATURE

The most interesting modern Yugoslav dramatists are Krleza, Nusic, and Cankar of the older generation; Jevtic, Cesarec, and Kreft, of the younger. "Modern Yugoslav Drama" (*ASEER* 5, Nos. 12, 13, 1-18), by Wayne S. Vucinich, gives first-rate accounts of all of these. There is also a good bibliographical survey of the literature on Yugoslav drama. In the same review (19-33) also appears Anthony J. Klancar's comparative study of "Josep Jurcic, the Slovene Scott." Jurcic (1844-1881) was the first among the Yugoslav writers to apply the ideas of Scott in his writings. One of his best novels *Deseti brat* (The Tenth Brother) borrows the plot of Scott's *The Antiquary*. The development of Slovene literature and Language from the 16th century to the period of the greatest of Slovene writers, Ivan Cankar and Oton Zupancic, is treated in the same author's "Slovenia and the Slovenes" (*Journal of Central European Affairs* 6, No. 1, 13-16).

INDO-EUROPEAN LINGUISTICS*

By George S. Lane
Professor, University of North Carolina

METHODOLOGY CONTROVERSY

The controversy over the methods of descriptive linguistics reported in some detail in The American Year Book (1945, pp. 983 f.) have continued; for example, in Robert Hall's article "The State of Linguistics: Crisis or Reaction" (*Italica* XXIII, 30-34), and the answer to it by Leo Spitzer (*MLN* LXI, 497-502). In addition, there has now been injected into this disagreement between the formalistic and mentalistic approaches to language study, the dispute over methodology between the older school of "neogrammarians" and "neolinguists." This dispute has already been touched upon in preceding reports in connection with discussion of the validity of the "laryngeal hypothesis" (cf. The American Year Book (1941, p. 908; 1942, p. 902; 1943, p. 902; 1945, p. 984).

The chief sponsor in America of the so-called "age and area theory" of the "neolinguists" is the Italian scholar G. Bonfante who has continued his controversy with A. Goetze in two articles, the first "Hieroglyphic Hittite, Indo-Hittite and the Linguistic Method" (*JAOS* LXV, 261-264) with an answer by Goetze (*ibid.* LXVI, 88), and the second "Indo-Hittite and Areal Linguistics" (*AJP.* LXVII, 289-310). The latter entails a detailed application of the methodology of the "neolinguists" to the Indo-Hittite hypothesis. Other discussions by the same scholar but with use of Romance, specifically Italian, materials are found in "A Remark on the Spread of Phonologic Change" (*PMLA* LXI, 1-6), "On Reconstruction and Linguistic Method" (*Word* I, 83-91), "Neogrammarians and Neolinguists: Italian *guglia*" (*Rom. Rev.* XXXVI, 240-243), and "Neogrammarians and Neolinguists: Italian *giorno*" (*PMLA* LIX, 877-881). To the last two titles we have the rejoinder by Robert Hall "Italian *guglia, giorno* and the Neogrammarians," together with Bonfante's reply (*Rom. Rev.* XXXVIII, 244-251).

---

* Abbreviations: *MLN—Modern Language Notes; JAOS—Journal of American Oriental Society; AJP—American Journal of Philology; PMLA—Publications of the Modern Language Association; Lang.—Language; Rom. Rev.—Romanic Review; Cl.P.—Classical Philology; MDU—Monatshefte für deutnches Unterricht; JEGP—Journal of English and German Philology.*

While The American Year Book is not the place for contributions to our science, the author of this report can not refrain from a brief comment reflecting personal opinion. The exponents of both sides of the controversy are subject to the criticism of not admitting the supplementary nature of both types of approach. Bonfante even goes so far as to deny the fundamental tenet of historical linguistics, namely, the invariability of phonetic law, and claims that the history of every word is an individual one, yet in all his work he tacitly seems to be cognizant of the regularity of phonetic development under given circumstances, and that is all we mean by phonetic law. The reaction of dialect geographers against the stiff-necked intransigence of the older school of neogrammarians is not surprising. The very complexity of the materials with which one deals in the history of modern cultural languages is, of course, to blame, and nowhere is the evidence more complex than in Italian, owing to the many factors obtaining in the development of the Italian language. All of which, however, does not refute phonetic law, but rather indicates our ignorance of, and inability to analyze, all these factors.

CONTRIBUTIONS TO THE DESCRIPTIVE METHOD

Contributions to the descriptive method are those by Z. S. Harris, "From Morpheme to Utterance" (*Lang.* XXII, 161-183), an attempt to present "a formalized procedure for describing utterances in terms of sequences of morphemes rather than of single morphemes" and by H. M. Hoenigswald, "Sound Change and Linguistic Structure" (*ibid.,* 138-143).

Of significance to the student of Indo-European antiquities and the history of Asiatic cultures is O. Maenchen-Helfen, "Are Chinese *hsi-p'i* and *kuo-lo* IE Loan Words" (*Lang.* XXI, 256-260). The author holds that these terms for "belt-hook" and "belt" are borrowed from the IE base *serp- in words for "scythe, sickle" and *k^wek^wlo- "wheel." The implications in connection with Central Asian studies, in particular Tocharian, may be significant. Though dealing more particularly with Hittite materials, the articles by E. Adelaide Hahn, "The Origin of the Relatives *kwi-, kwo-*" (*Lang.* XXII, 68-85), and by J. A. Kerns and B. Schwartz, "Multiple Stem Conjugation: An Indo-Hittite Isogloss?" (*ibid.,* 57-67) are of interest to the Indo-Europeanist in general. The former examines the evidence in the development of the relative from the indefinite pronominal stem; the latter attempts to evaluate the results of a comparison of verbal stem formations in IE proper and Hittite in relation to the Indo-Hittite hypothesis.

Leonard Bloomfield, "Twenty-one Years of the Linguistic Society" (*Lang.* XXII, 1-3), reviews briefly, at the event of the majority of the Linguistic Society of America, the state of affairs which led to the foundation of the Society in 1925, its major achievements and the general problems still facing it. The most important, and the most difficult, task is yet before the American linguist: The promotion of knowledge of linguistic science beyond the immediate circle of specialists. The contribution of the Linguistic Society through its organ, *Language,* to the technical advancement of the science is amply attested to by the frequent reference to that journal in this report in THE AMERICAN YEAR BOOK from year to year.

An echo of the war activities of the Intensive Language Program of the American Council of Learned Societies (cf. THE AMERICAN YEAR BOOK, 1943, p. 900 f., 1944, p. 928 f.) is found in the report of a "Symposium on Intensive Civilian Courses in German" (*Germ. Quart.* no. 1, vol. XIX, Jan. 1946).

INDO-IRANIAN

Sanskrit.—The American Oriental Society has published F. Edgerton's *Sanskrit Historical Phonology* as a Supplement to *JAOS* (no. 5, Jan.-Mar. 1946). Mimeographed copies of the work had been circulated earlier by Professor Edgerton to his colleagues and had already seen good service in Sanskrit classes in America. The printed edition is welcome to all Indo-Europeanists whether or not teachers of Sanskrit. It is a handy elementary introduction for the use of beginning students and will prove a great time-saver for class use. Thumb's *Handbuch* is long out of date and unavailable, and the great Wackernagel, still incomplete, of course, is an impossible book for beginners. Edgerton has done a great service. Other contributions of the same scholar are: "Meter, Phonology and Orthography in Buddhist Hybrid Sanskrit" (*JAOS* LXVI, 197-206), "Indic Causatives in *-āpayati* (*-āpeti, -āvei*)" (*Lang.* XXII, 94-101), and "Sir William Jones: 1746-1794" (*JAOS* LXVI, 230-239). The first two are outgrowths of Edgerton's life work, the grammar and lexicography of Buddhist Sanskrit; the last is a memorial sketch of the life of the founder of Indic philology and formulator of the fundamental postulate of comparative grammar concerning the relationship of languages of observed regular similarity. In "The Nasal Phonemes of Sanskrit" (*Lang.* XXII, 86-93), M. B. Emeneau applies modern techniques to determine the phonemic character of the Sanskrit nasals. P. Tedesco, "Sanskrit *bāṣpa-* 'tears'" (*ibid.,* 184-193), concludes the form to be Middle Indic for Old Indic **varṣman-*.

Old Persian.—Prof. R. G. Kent has continued his fruitful researches with three contributions: "Old Persian *artācā brazmaniya*" (*Lang.* 21. 223-229), "The Accusative in Old Persian *mām kāma*" (*JAOS* LXVI, 44-49), both new interpretation of two old cruxes, and "The Oldest Old Persian Inscription" (*ibid.,* 206-212), in which he concludes in favor of the argument for a later date for the inscriptions in question than that assumed by some scholars.

GREEK AND LATIN

Greek.—The dean of American Greek dialect scholars, Prof. C. D. Buck has published a summary of information turned up by the Italian excavations on "The Dialect of Cyrene" (*Cl. P.* XLI, 129-134), and, in Homeric studies, G. M. Bolling, "Dative Plurals of the *o-* and the *ā*-stems in Homer" (*Lang.* XXI, 261-264), claims that the types ’Αχαιοις, Θεης are originally sandhi-variants of the type in *-οισι, -ησι*, not original instrumentals. R. L. Ward in "Loss of Final Consonants in Greek" (*Lang.* XXII, 102-108), illustrates the trend toward the reduction of permitted final consonants in the history of the language from Indo-European to modern times.

Latin.—F. Metzger has given a study in Latin and Indo-European word-formation "Latin *-idus* and *-tūdō*" (*Lang.* XXII, 194-199), and Miss E. A. Claflin in "The Middle Voice in the *De Senectute*" (*AJP.* LXVII, 193-221), has attempted to show middle uses of the passive in idiomatic Latin prose. R. A. Hall's article "Classical Latin Noun Inflection" (*Cl. P.* XLI, 84-90), tentatively outlines a "descriptive" analysis of the Latin declension as opposed to the analysis of traditional grammar.

GERMANIC

Prof. Otto Springer has profited from his stay in Germany in government service in two reports to his colleagues: "Germanic Studies in Germany during the War" (*MDU* XXXVIII, 177-186), containing much information of men and projects, and "Germanic Bibliography 1940-45" (*JEGP*. XLV, 251-326). Incomplete and uncritical as this latter is, it is nevertheless welcome also to the Indo-Europeanist. R. A. Fowkes, "Germanic _*harta_ 'Resin, Pitch'" (*JEGPh*. XLV, 218-219) connects the Germanic words to the IE base _*(s)ker-_ "separate, divide" (by way of "excretion"). W. M. Austin in "A Corollary to the 'Germanic Verschärfung'" (*Lang*. XXII, 109-111), attempts to show that the velars in OE *cwicu*, etc., and OHG *franco*, beside Lat. *vīvus* and Skt. *priya-* result from Indo-Hittite laryngeal plus *w* and *y*.

In Norse, Prof. A. M. Sturtevant has continued his gleanings in unsolved problems of grammar and lexicography: "Semantic Notes on the Elder Edda" (*Scand. Stud*. XIX, 1-18), "Irregularities in the Old Norse Substantive Declension" (*ibid*., 79-88), and "Notes on Certain Old Norse Analogical Forms" (*MLN* LXI, 57-60).

While the publication of textbooks in modern languages is normally of insufficient significance to warrant mention in this report, yet Stefán Einarsson's book *Icelandic: Grammar, Texts, Glossary* (Baltimore, 1945), because of the rarity of the occasion and the importance of Icelandic to the Germanist, merits generous consideration. Here at last is a competent means of approach to the study of that most archaic living Germanic dialect. Reviews are R. Beck (*MLN* LXI, 200-202), L. Hollander (*Scand. Stud*. XIX, 42-44), and G. S. Lane (*Lang*. XXII, 249-259).

For West Germanic in general there is W. H. Bennett's study "The Cause of the West Germanic Consonant Lengthening" (*Lang*. XXII, 14-18), which holds that the immediate cause was the "development of new vowels, which came about through the vocalization of *j* and *w* and through the generation of vowels in conjunction with liquids and nasals." In Old English, J. W. Watson, "Northumbrian Old English *ēo* and *ēa*" (*Lang*. XXII, 19-26), attempts to show the dialectal "phonemic coalescence in an ǣ-diphthong."

ARMENIAN

G. Bonfante in "Armenian and Phrygian" (*Armenian Quarterly* I, 82-97), reviews the linguistic evidence for connection of the two ethnic groups. Also to be welcomed is the appearance of a new journal dedicated to serious research in a much neglected field.

SLAVIC

C. T. Hodge attempts a new phonemic analysis with particular attention to affricates and palatals in "Serbo-Croatian Phonemes" (*Lang*. XXII, 112-120).

CELTIC

J. J. Parry gives a survey of the Cornish language movement since the publication of Jenner's *Handbook* (1904) in "The Revival of Cornish: An Dasserghyans Kernewek" (*PMLA* LXI, 258-268).

PERIODICAL PUBLICATIONS

American Historical Review
8 N. 6th Street, Richmond, Va.
American Literature
Duke University Press, Durham, N. C.
American Scholar
5 E. 44th Street, New York City.
American Speech
Columbia University Press, New York City.

XXV. LITERATURE AND LANGUAGE

Atlantic Monthly
8 Arlington Street, Boston.

Books Abroad
University of Oklahoma Press, Norrow, Okla.

Catholic Historical Review
Catholic University Press, Washington, D. C.

Classical Journal
Washington University, St. Louis, Mo.

Classical Philology
5750 Ellis Ave., Chicago.

Classical Weekly
4200 Fifth Ave., Pittsburgh, Pa.

Commonweal, The
386 Fourth Ave., New York City.

Editor and Publisher
1475 Broadway, New York City.

English Literary History
Johns Hopkins Press, Baltimore, Md.

Germanic Review
Columbia University Press, New York City.

Harper's Magazine
49 East 33rd Street, New York City.

Harvard Graduates Magazine
Harvard University, Cambridge, Mass.

Harvard Studies in Classical Philology
Harvard University, Cambridge, Mass.

Journal of American Oriental Society
329 Sterling Memorial Library, New Haven, Conn.

Journal of English and German Philology
University of Illinois, Urbana, Ill.

Journal of the History of Ideas
New York City College, Convent Ave., & 139th Street, New York City.

Journal of Modern History
5750 Ellis Ave., Chicago.

Journal of Negro History
1538 9th Street N.W., Washington, D. C.

Journal of Southern History
Louisiana State University, Baton Rouge, La.

Kenyon Review
Kenyon College, Gamber, O.

Language
Mount Royal & Guilford Aves., Baltimore, Md.

Library Journal
62 W. 45th Street, New York City.

Library Quarterly
5750 Ellis Ave., Chicago.

Mid-America—An Historical Review
Loyola University, Chicago.

Mississippi Valley Historical Review
Lincoln, Neb.

Modern Language Quarterly
Johns Hopkins Press, Baltimore, Md.

Modern Philology
5750 Ellis Ave., Chicago.

Nation, The
20 Vesey Street, New York City.

New England Quarterly
200 Stevens Hall, Orono, Maine.

New Republic, The
40 East 49th Street, New York City.

Pacific Historical Review
University of California Press, Berkeley, Calif.

Philological Quarterly
State University of Iowa, Iowa City, Ia.

P M L A
Modern Language Association of America, 100 Washington Square E., New York City.

Poet Lore
30 Winchester Street, Boston.

Poetry
232 East Erie Street, Chicago.

Publishers Weekly
62 West 45th Street, New York City.

Romanic Review
Columbia University Press, New York City.

Saturday Review of Literature
25 West 45th Street, New York City.

Sewanee Review
University of the South, Sewanee, Tenn.

South Atlantic Quarterly
Duke University Press, Durham, N. C.

Southwestern Historical Quarterly
Texas State Historical Association, Austin, Tex.

Speculum
Mediaeval Academy of America, 1430 Massachusetts Ave., Cambridge, Mass.

Studies in Philology
University of North Carolina Press, Chapel Hill, N. C.

Travel
116 East 16th Street, New York City.

Virginia Quarterly Review
University of Virginia, Charlottesville, Va.

William & Mary Quarterly
College of William & Mary, Williamsburg, Va.

Yale Literary Magazine
Yale Station, New Haven, Conn.

Yale Review
New Haven, Conn.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

American Academy of Arts and Letters, 633 W. 155th St., New York City.

American Academy of Arts and Sciences, 28 Newbury St., Boston.

American Booksellers Assn., 35 E. 20th St., New York City.

American Council of Learned Societies, 1219 16th St., N.W., Washington, D. C.

American Institute of Graphic Arts, 115 East 40th Street, New York City.

American Library Assn., 520 N. Michigan Ave., Chicago, Ill.

American Newspaper Guild, 63 Park Row, New York City.

American Newspaper Publishers' Assn., 370 Lexington Ave., New York City.

American Philosophical Assn., Wesleyan University, Middletown, Conn.

American Philosophical Society, 104 S. Fifth St., Philadelphia, Pa.

American Society of Composers, Authors and Publishers, 30 Rockefeller Plaza, New York City.

Associated Press, The, 50 Rockefeller Plaza, New York City.

Association of National Advertisers, 285 Madison Ave., New York City.

Bibliographical Society of America, 100 Washington Square, E., New York City.

Book Publishers Bureau, 347 Fifth Ave., New York City.

Foreign Publicity Service, 77 Bowery, New York City.

National Committee of the United States of America on International and Intellectual Cooperation, 405 West 117th Street, New York City.

National Editorial Assn., 188 W. Randolph St., Chicago, Ill.

National Institute of Arts and Letters, 633 W. 155th St., New York City.

National Publishers' Assn., 232 Madison Ave., New York City.

PEN Club—American Center, 16 East 96th Street, New York City.

Society of American Archivists, Menasha, Wis.

United Press Assn., 220 E. 42nd St., New York City.

U. S. Publishers Assn., Inc., 386 Fourth Ave., New York City.

AMERICAN LITERATURE

American Dialect Society, Woman's College of the University of North Carolina, Greensboro, N. C.

Authors Guild, 6 E. 39th St., New York City.

Authors League of America, Inc., 6 E. 39th St., New York City.

Catholic Writers Guild of America, 128 W. 71st St., New York City.

National Assn. for American Speech, 1150 Fifth Ave., New York City.

Simplified Spelling Board, 1 Madison Ave., New York City.

Walt Whitman Society of America, 250 Fulton Ave., Hempstead, N. Y.

LANGUAGE AND LITERATURE

American Classical League, Vanderbilt University, Nashville, Tenn.

American Oriental Society, 329

Sterling Memorial Library, New Haven, Conn.

AMERICAN PHILOLOGICAL ASSN., Swarthmore College, Swarthmore, Pa.

AMERICAN SPEECH CORRECTION ASSOCIATION, University of Minnesota, Minneapolis, Minn.

CLASSICAL ASSOCIATION OF THE MIDDLE WEST AND SOUTH, Washington University, St. Louis 5, Mo.

DICKENS AMERICAN FELLOWSHIP, 570 Lexington Ave., New York City.

INTERNATIONAL ARTS AND LETTERS, 457 West 57th Street, New York City.

LINGUISTIC SOCIETY OF AMERICA, 2019 Lanier Drive, Silver Spring, Md.

MODERN LANGUAGE ASSN. OF AMERICA, 100 Washington Square E., New York City.

SHAKESPEARE ASSOCIATION OF AMERICA, INC., 601 West 113 Street, New York City.

HISTORY

AMERICAN ANTIQUARIAN SOCIETY, Worcester, Mass.

AMERICAN ASSOCIATION FOR STATE AND LOCAL HISTORY, Box 6101, Washington, D. C.

AMERICAN CATHOLIC HISTORICAL ASSOCIATION, 1312 Massachusetts Avenue N.W., Washington, D. C.

AMERICAN HISTORICAL ASSOCIATION, Library of Congress Annex Study Room 274, Washington, D. C.

AMERICAN SOCIETY OF CHURCH HISTORY, 5757 University Avenue, Chicago, Ill.

HISPANIC SOCIETY OF AMERICA, THE, 155th Street, West of Broadway, New York City.

MEDIAEVAL ACADEMY OF AMERICA, 1430 Massachusetts Avenue, Cambridge, Mass.

MISSISSIPPI VALLEY HISTORICAL ASSOCIATION, University of Minnesota, Minneapolis, Minn.

NATIONAL HISTORICAL SOCIETY, 175 Fifth Avenue, New York City.

SOUTHERN HISTORICAL ASSOCIATION, Louisiana State University, University, La.

DIVISION XXVI

THE ARTS

ARCHAEOLOGY

By JOTHAM JOHNSON
ASSISTANT PROFESSOR, NEW YORK UNIVERSITY

GENERAL

Archaeological studies as a whole in 1946 were still far below normal peacetime levels. The special talents which made field archaeologists useful to their country in the war were also in demand after the end of fighting, and such figures as Carl W. Blegen of the University of Cincinnati, C. B. Welles of Yale, John F. Daniel of the Pennsylvania Museum, Laurance P. Roberts of the Brooklyn Museum, and Charles R. Morey of Princeton were not released to civilian pursuits until late in 1946 or were still in government service. Many others, who had already returned to campus or museum, found it desirable to brush up their educational practice, refresh their classroom material, catch up on four years' back reading, and consolidate their social ties before striking off into new ventures.

As in other fields, many persons who would have retired between 1941 and 1945 had made their contribution to the war effort by remaining in office; these now found it possible to step aside, and the appearance of new, youthful faces in positions of professional responsibility was a novel aspect of 1946.

ARCHAEOLOGICAL INSTITUTE ACTIVITIES

Organization.—The Archaeological Institute of America has, since its founding in 1878, acted as a central clearing-house for archaeologists of the United States and Canada. In 1946 the Institute had a new president, Sterling Dow of Harvard, and a new General Secretary, Stephen B. Luce of the Rhode Island School of Design. The official technical journal of the Institute, the *American Journal of Archaeology,* has a new editor, John F. Daniel of the University of Pennsylvania Museum.

American School of Classical Studies at Athens.—The Institute rarely participates directly in field excavations, which are considered to be essential functions of the daughter schools, six in number. The American School of Classical Studies at Athens, Greece, under the acting directorship of Gorham P. Stevens, has resumed partial operation; the new director, Rhys Carpenter of Bryn Mawr College, will take up residence in September, 1947. The School's excavations are both major exploration and research projects and training-grounds in field methods for students of archaeology. In 1946, two notable excavations were resumed, those of the Agora at Athens, under a new field director, Homer A. Thompson of the Institute of Advanced Study, and of Corinth, directed by Oscar Broneer; but a Greek government restriction on the number of workmen employed (20 in the Agora, 10 elsewhere) meant that little more than cleaning and repairs could be undertaken.

Classical School of the American Academy in Rome.—Thanks to a pre-war policy of the Italian Department of Antiquities, students of the

Classical School of the American Academy in Rome had infrequent opportunities to take part in actual field excavations, and their studies were principally concerned with the re-evaluation of discoveries previously made and reported by Italian excavators. It appears that this situation is now to be corrected; the Academy hopes to be granted a concession to excavate a major site, so that students of classical archaeology as well as of architecture may look forward to field training and to working with fresh artifacts. The Academy itself has a new director, Laurance P. Roberts, formerly of the Brooklyn Museum, and Frank E. Brown of Yale University has been named professor in charge of the Classical School and director of excavations. Dr. Brown, at present Director of Antiquities for the Syrian government, is to be released from his present duties in time to arrive in Rome before Oct. 1, 1947.

American School of Oriental Research at Jerusalem.—The American Schools of Oriental Research are based on the school in Jerusalem, currently under the directorship of Nelson Glueck of Hebrew Union College, Cincinnati. With faculty and several fellows in residence, the Jerusalem school is back in nearly normal operation, but the present program of the school envisages field exploration rather than actual excavation under present political conditions. For the term beginning in September 1947, Millar Burrows of Yale has been elected director. When conditions permit, the Jerusalem school has an offshoot in the American School of Oriental Research at Baghdad, Iraq. This school did not resume operation in 1946; but S. N. Kramer of the University of Pennsylvania Museum, as annual professor of that school, has taken his station in Constantinople, where he is copying cuneiform literary texts deposited there.

The American School of Prehistoric Research, whose director is Hugh Hencken of the Peabody Museum, Harvard University, has also been gathering its forces in 1946. The school has plans for a summer session in France in 1947, and for an expedition to excavate the Caves of Hercules near Tangier in Morocco, where palaeolithic and neolithic materials have already been found. The school is also publishing a monograph, now in press, on "The Neolithic Period in Bulgaria," by the late James Harvey Gaul, a former student, who, while serving with the Office of Strategic Services in Europe, was captured and illegally executed by the Germans.

The School of American Research, at Santa Fe, New Mexico, has been adding steadily to its plant and collections and, under the directorship of Edgar L. Hewett, has become the natural focus of American studies in the southwest. Dr. Hewett died on Dec. 31, 1946; Paul A. F. Walter, vice-president and treasurer of the school's Managing Board, and treasurer of the Board of Regents of the Museum of New Mexico, is acting in his place until a permanent director is elected.

OTHER ORGANIZATIONS

In other institutions, such as the Oriental Institute at Chicago, Metropolitan Museum of New York, Museum of Fine Arts in Boston, and the University Museum in Philadelphia, which formerly conducted sensationally successful excavations in the Mediterranean and western Asia, the policy in 1946 has similarly been to gather strength and watch for the political situation to clear.

Field exploration outside the United States has suffered from the sustained effort of the Government to depress interest rates, which has halved institutional income from invested funds while drying up private sources which once supported archaeological enterprise. There is no thought of subsidy from public monies, though such funds have been made available for research in the natural sciences. As long as the present situation holds, institutions of the sort here described must, in order merely to hold their ground, depend on multitudes of membership fees and small contributions.

FIELD REPORTS

Among the reports from the field which particularly concerned and interested American archaeologists in 1946 are (1) the return, from Java and Japanese prison camps, of Ralph von Koenigswald, with fossils of three human or humanoid types, discovered before the war and hidden from the Japanese only by supreme good management and good fortune: Pithecanthropus Erectus, Meganthropus, and Gigantopithecus; von Koenigswald, with the collaboration of Franz Weidenreich, is studying these epochal finds at the American Museum of Natural History, New York; (2) the discovery, in the port area of Boston, of a very primitive Indian fishing-village; (3) the discovery, in Mexico, of five colossal portrait heads of Indians, each nearly ten feet high and weighing 20 tons, dating from the time of Christ, similar to six previously found; (4) reports from the former mosque, former Byzantine church of Santa Sophia in Constantinople, where Thomas Whittemore of Harvard continued throughout the war his work of uncovering the fabulous mosaics; in 1946 he bared new figures quite the equals of the best found earlier; (5) the discovery, by W. D. Strong of Columbia University, at a Mochica (pre-Inca, c. 1000 A.D.) site in the Viru Valley of Peru, of a sensational ritual burial of an old man, two women and a boy, associated with figures of the god Aiapaec, for whom the old man had probably been high priest. This expedition is integrated with the program of the Institute of Andaean Research, in which Columbia University, American Museum of Natural History, Chicago Museum of Natural History, Yale University, and the Smithsonian Institution are cooperating with Peruvian authorities; (6) the discovery, by W. A. Ritchie of the Rochester Museum of Arts and Sciences, near the Seneca river in central New York, of an Owasco (pre-Iroquois, c. 1250-1300 A.D.) site, with extensive pottery deposits; (7) the collapse of the much publicized Tranquillity (California) burials, where fossilized human bones found in proximity to a bone of an extinct cameloid, raising the presumption of relatively great antiquity, appeared on meticulous examination to be quite modern.

PUBLICATIONS

Printing is still a difficult factor, but the appearance of several important works in 1946 gave promise of more to come: Frank C. Hibben, *The Lost Americans* (Crowell), William S. Smith, *Ancient Egypt* (Museum of Fine Arts, Boston), Rhys Carpenter, *Folklore, Fiction and Saga in the Homeric Epics* (Univ. of California Press), Nelson Glueck, *The River Jordan* (Westminster), David M. Robinson, *Excavations at Olynthus, Part 12, Domestic and Public Architecture* (Johns Hopkins Press), George Hoyningen-Huene and David M. Robinson, *Baalbek Palmyra* (photographs and descriptive text, Augustin, New York), Preliminary Report of the Excavations at Dura-Europos, Volume IX, Part 2, *The Necropolis* (Yale Univ. Press), Sylvanus Griswold Morley, *The Ancient Maya* (Stanford Univ. Press) *Dumbarton Oaks Papers,* Volume III (Harvard Univ. Press), George Hoyningen-Huene and Alfonso Reyes, *Mexican Heritage* (photographs and commentary, Augustin, New York), and Edgar L. Hewett, *Two Score Years* (Univ. of New Mexico Press). In addition, other manuscripts have been completed and delivered to the press, and should appear in 1947: Volume II of the *Excavations at Tarsus* series, by Hetty Goldman and others (Princeton Univ. Press), two fascicles of the *Corpus Vasorum Antiquorum* (Harvard Univ. Press), A. E. Raubitschek's *Dedications from the Athenian Acropolis,* L. E. Lord's *History of the American School of Classical Studies at Athens* (Harvard Univ. Press), and P. V. C. Baur's Final Report of the Excavations at Dura-Europos, Volume IV, Part 3, *Lamps* (Yale Univ. Press).

Elsewhere the recession of military preoccupations has provided an opportunity to complete the preparation of official reports of excavations made prior to 1939: the Athenian Agora, the North Slope of the (Athenian) Acropolis, Persepolis, Troy, Pylos, Olynthus, Corinth, Antioch, Dura-Europos, Nessana, Piedras Negras, and many others. Following the First World War, it was about five years before field work could be resumed in comfort and relative security; if this situation is to obtain again, the subsequent flood of considered publications will have beneficial effects throughout the whole field of ancient studies.

PAINTING

By Florence S. Berryman
The American Federation of Arts

GENERAL

The first full post-war year accelerated normal activities and developments in the field of painting and witnessed a sharp decline in wartime aspects, surprising only because of its suddenness. Young artists, fresh from the armed forces, found little or no interest in their painted impressions, in marked contrast to the public's response to combat art during the previous year.

In Europe, the U. S. Army continued to cope effectively with displaced art treasures. The 202 masterpieces belonging to German museums, sent to the United States in December, 1945, caused a major art controversy in 1946. However, other international tours of collections of paintings were given much impetus by the U. S. Department of State, and enjoyed happier receptions.

Outstanding masterpieces entered American collections, led by the third magnificent Kress gift to the National Gallery of Art. Patronage of art by industry increased in degree, and some new business firms entered the field. Auction prices for paintings soared far beyond the previous inflationary season.

ARMY-SPONSORED EXHIBITIONS IN GERMANY

Superb exhibitions of salvaged treasures were held in the museum at Wiesbaden in the American Occupational Zone of Germany, under auspices of the monuments and fine arts division of the American Military Government. The first, February through April, comprised Italian old masters from the Berlin and Frankfort collections. Of 63,000 persons who paid admission to see it, only a few were G. I.'s, whose indifference to the opportunity saddened the authorities.

The second show opened May 13 for the summer: "Northern Art before 1600" including famous German and Flemish paintings, and Egyptian sculpture, drawn mainly from the Kaiser Friedrich Museum, Frankfort, Darmstadt, and Cologne galleries collections, recovered from salt mines and comparable places. The sculptured bust of Queen Nefertiti was the outstanding exhibit. More than 1,000 people daily paid admission. American military and German civilian guards were on duty 24 hours a day. German art experts assisted in the care of the paintings.

CONTROVERSY OVER GERMAN MASTERPIECES

The old master paintings, including some of the world's greatest, brought over and stored in the National Gallery's vaults "for safe keeping until conditions in Germany insuring their proper care have been reestablished," set off the year's chief art furore. Press releases from the White House and State Department convinced the average person that these treasures from the Kaiser Friedrich and other German museums were in no sense war loot.

However, the February issue of the *Magazine of Art,* official organ of The American Federation of Arts, contained strong protests from American museum officials and other art leaders against the transfer, as morally untenable, establishing dangerous precedents, etc. In May, a committee of nearly 100 art leaders sent to President Truman a signed resolution demanding immediate return of the German masterpieces, comparing United States action to Nazis' "protective custody." The committee was publicly reproved by former Justice Owen J. Roberts, chairman of the American Commission for the Protection and Salvage of Artistic and Historic Monuments in Europe, in a press statement saying in effect that the Commission trusted the United States Government to keep its word, and that the resolution had no justification. Still other groups, among them the American Artists Professional League, pleaded with the Government for public exhibition of the paintings, suggesting admission charge, with proceeds to go for German aid. At least one reason why they were not shown during 1946 is that they came to this country minus their frames.

STATE DEPARTMENT ART TOURS

The State Department entered the touring-art-exhibition field in a big way, in response to requests from many places, for exhibitions of American art. Some of its projects are composed of outright acquisitions of contemporary art, in charge of J. Leroy Davidson, while others are organized by institutions and experts at the invitation and under the sponsorship of the State Department.

Among the shows assembled by Mr. Davidson were four exhibitions of original prints bought and sent to South America. Two collections of oil paintings, entitled "Advancing American Art," one comprising 49 to be shown in the Eastern Hemisphere, the other of 30 for exhibition in Latin America, were displayed at the Metropolitan Museum, New York City, in October, before they embarked on travels to last for five years. The State Department finds that buying works outright is less expensive than renting them for so long a period.

As a one-man jury, Mr. Davidson has chosen paintings and prints of an esthetically radical character, hence his traveling shows are "leftist" rather than cross sections. This brought protests to the State Department from such conservative art groups as The American Artists Professional League, The National Academy, The Salmagundi Club of New York, The Society of Illustrators, and The Allied Artists, who considered the touring shows "one-sided."

The latest State Department exhibition, a loan of 60 paintings from International Business Machines' collection, selected by Mr. Davidson, sailed the end of the year for Cairo, Egypt, where it opened under sponsorship of King Farouk, in January, 1947. Thence it will go to Italy, and will tour Europe as "American Industry Sponsors Art." It ranges from Samuel F. B. Morse to Karl Zerbe.

BRITISH AND AMERICAN EXCHANGES

The United States' outstanding art export in 1946 was the collection of more than 200 oil paintings and watercolors by 106 artists, providing a panorama of American art from Colonial times to the present. In 1945, the State Department received a request for such a loan, from the Tate Gallery, London, which bore all expenses of the show outside of our country. The National Gallery of Art organized it, with selections made by twin juries of outstanding American museum officials. The exhibition was opened in June by British royalty and the U. S. Ambassador, and remained on view six weeks. The majority of English critics were not favorably impressed with it.

Great Britain sent to two American museums, 62 paintings by three of her greatest masters: Hogarth, Constable, and Turner, valued at $7,000,000. This loan exhibition opened Oct. 15 at The Art Institute of Chicago for two months, whence it went to the Metropolitan Museum, New York City for showing Jan. 24-March

16, 1947. These loans from the British Government, leading museums, and King George VI and other private owners, required an act of Parliament; the majority of the works had not previously left England, none had crossed the Atlantic.

LATIN AMERICAN EXCHANGE

"Watercolors, U. S. A." also organized by the National Gallery, was assembled by Walker Art Center, Minneapolis, for a six-months tour of Latin America. It illustrated important trends in the medium during the half century between Homer and Morris Graves. The paintings, borrowed from leading museum collections, were protected by a novel method of framing in air-sealed plexiglass.

The Art Section of the Council for Inter-American Cooperation, sponsored by the State Department. brought two exhibitions to tour the United States: 60 paintings by six Latin Americans, and paintings and drawings by nine young Mexicans. The Section also started a third show, work by a Bolivian artist Antonio Sotomayor, who has lived in San Francisco for 20 years.

NETHERLANDS APPRECIATION

The government of The Netherlands sent to the United States for a one-year tour, 48 masterpieces of Dutch painting of the 16th and 17th centuries, valued at $1,000,000 as a gesture of appreciation for the much larger quantity of art looted from Holland by the Nazis, and returned through the efforts of the U. S. armed forces. The exhibition opened at the National Gallery of Art in December; during 1947 it will visit 14 museums and art galleries, with which are connected men of our Monuments, Fine Arts and Archives Section who were responsible for the restoration of Holland's stolen treasures.

INDUSTRY'S PATRONAGE OF ART

Pepsi-Cola Company's third annual competition "Paintings of the Year" was truly a national affair, owing to the new regional jury system inaugurated by Roland McKinney, director. The resultant exhibition which opened Sept. 30, filled 10 galleries on four floors of the National Academy, New York. Twenty prizes, totaling $15,250, were awarded: first to Boris Deutsch, $2,500 for his "What Atomic War Will Do to You," a group of tortured, distorted figures; second, $2,000 to Carlos Lopez-Rey; third, $1,500 to Robert Gwathmey; fourth, $1,000 to Abraham Rattner; fifth, $750 to Gregorio Prestopino; and 15 others of $500 each. Pepsi-Cola also awarded fellowships of $1,500 each to seven promising young artists selected from lists submitted by the seven regional juries.

Encyclopaedia Britannica, which intends to augment annually its collection of paintings touring the United States, devised a new plan for the institutions scheduled to display the show which could not handle more than the original 135 paintings. A "rotating annual," emphasizing creative experimentation, inaugurated at the New York Architectural League in October, will join the larger show whenever space permits. *Britannica* rents, with option to buy, 12 to 15 paintings for a year's tour, at $200 each, not deducted if painting is subsequently purchased.

Heller-Deltah Company exhibited in January 1946 at Portraits, Inc. New York City, 50 paintings selected in its theme prize competition, "Woman with Pearls," inaugurated in 1945. Awards, totaling $4,500 in victory bonds, went to Max Weber, $2,000; Lily Cushing, $1,000; Ruth Ray, $750; 10 others, $75. The exhibition began a nationwide tour in February. The 1947 La Tausca competition, announced in 1946, contained important rules changes to provide artists with more financial security. Every painter represented was invited by a jury, and was paid $100 for the exhibition of his work for one year, excepting only those who won the first six prizes, those vhose paintings might be sold, and hose whose paintings were owned by omeone else.

Loew-Lewin Productions held an nternational competition (by invitation only) for a painting of "The Temptation of St. Anthony" to be used in their motion picture "Bel Ami," adapted from De Maupassant's novel. Max Ernst's interpretation won the prize of $3,000 and was used n the film. Each of the other 10 American and European contestants was given $500; all retain ownership of their paintings. The collection, urrealistic in character, opened in New York City in September, the irst place on a national circuit arranged by The American Federation of Arts. The second engagement for the Copley Society, Boston, was cancelled because Mayor James M. Curley denounced the paintings, as "an nsult to the Catholic Church." However, they were shown a month later at the Stuart Art Gallery, Boston.

International Business Machines continued to acquire and exhibit extensively its paintings and other art objects. Its president, Thomas J. Watson, has bought more than 30,000 art items in the past decade, the best of which will be housed in a permanent museum now under construction at Endicott, N. Y.

Standard Oil of New Jersey publicly exhibited for the first time 87 oils, watercolors, and drawings by 16 outstanding contemporary American artists, depicting the development and distribution of oil during the war years. These are only a part of the company's collection, which began several years ago in a modest way, as illustrations for its publication *The Lamp*. A selection was sent on a national circuit by The American Federation of Arts.

Gimbel Stores of Philadelphia and Pittsburgh sponsored a project, directed by Associated American Artists, for a collection which will total 100 oils, watercolors, and drawings of various aspects of contemporary life n Pennsylvania, to be painted by 14 contemporary artists, and sent out on a national circuit. George Biddle and Joe Jones were the first commissioned.

MUSEUM ACQUISITIONS BY GIFT, BEQUEST, AND PURCHASE

The National Gallery of Art exhibited, in February 1946, the most munificent gift to an American museum shown during 1946: 110 recent additions to the Samuel H. Kress collection, the third gift from Mr. Kress. The great majority were Italian Renaissance paintings, 12th through 18th centuries; there were also French paintings of the 17th and 18th centuries; Italian Renaissance, English Gothic, and early German sculpture. The National Gallery received four important paintings by Canaletto, representing the fading splendor of Venice, a gift from Barbara Hutton. Albert Ryder's "Siegfried and the Rhine Maidens," one of his six most important paintings, was purchased for the National Gallery through the Mellon fund.

The Boston Museum of Fine Arts made its most important acquisition in many years: a crucifixion triptych by Duccio di Buoninsegna. Owned and kept in England by J. P. Morgan for 40 years, it is one of only 13 paintings by Duccio outside of Italy, of seven in the United States. "The Artist in His Studio" by Rembrandt was given to the Boston Museum by Mrs. Zoe Oliver Sherman.

The Cincinnati Art Museum received the greatest Christmas gift in its history, when Miss Mary Hanna, on Dec. 12, presented 31 oils and two pastels, representing almost all the oil paintings in the famous Hanna collection, all of its English paintings. The collection is especially strong in Dutch 17th century painting.

Los Angeles County Museum acquired 22 old master paintings, sculptures, and crafts for about $75,000 of the $100,000 given by the William Randolph Hearst Foundation; selections were made by William R. Valentiner to represent periods, artists, or schools lacking or weak in the Museum's permanent collections. Zurburan's "Young Christ in the

Desert" was the outstanding painting of a group, including works by Jordaens, Gerard Dou, and other Dutch and Italians. The Museum opened Oct. 1 an exhibition of Mr. and Mrs. George Gard De Sylva's collection of French art—22 paintings and 10 sculptures dating from the 1860's to the 1920's, eight of which have been given to the Museum, and the remainder promised.

Metropolitan Museum of Art.—Particularly interesting, among many acquisitions by the Metropolitan Museum of Art, New York City, is the superb portrait by Paolo Veronese, of the Venetian sculptor Alessandro Vittoria, holding one of his own statuettes, a version of which belongs to the Metropolitan.

The Art Institute of Chicago acquired, both by gift and purchase, paintings of many schools and periods, from Lucas Cranach the Elder to Yves Tanguy.

The William Rockhill Nelson Gallery, Kansas City, acquired Velasquez's portrait of Mariana, Queen of Spain, a rare example in the United States.

The Toledo Museum of Art acquired from a Dutch collector "Peasants before an Inn" by Jan Steen.

The Minneapolis Institute of Art acquired "Prodigal Son" by David Teniers the Younger, painted about 1640; and received as a gift from the Chester Dale Collection Benjamin West's "Countess of Northampton" (and her daughter) painted 1762.

The Detroit Institute of Arts acquired "The Wilkinson Family," an outstanding painting by Benjamin Wilson, British 18th century.

The Montclair (N. J.) Museum acquired Gilbert Stuart's portrait, painted 1782, of the eminent Caleb Whitefoord, who came to conduct peace negotiations with the American colonies and was a friend of Benjamin Franklin.

The State College of Washington at Pullman received the Virginia and Charles Orton Collection, planned as a gift and developed in the past two years. It now numbers 30 paintings by outstanding Americans, from impressionism to the present, and will be augmented annually.

The Butler Art Institute, Youngstown, Ohio, acquired through gift and purchase 13 paintings by 19th and 20th century Americans, among them Eakins, David Blythe, and Eastman Johnson.

St. Louis City Art Museum acquired one of Winslow Homer's most important early paintings, "The Country School," dated 1871.

The Springfield (Mass.) Museum acquired an outstanding still life by Chardin, "Rafraichissements."

The Whitney-Metropolitan Museum purchases of contemporary art 1943-46 (the four years since the two New York City museums' merger was announced) were shown at the Whitney in September. The Metropolitan purchased 83 oils, sculptures, watercolors, and drawings, while 74 works were purchased by the Whitney. The Museum of Modern Art, New York City, bought in 1946, nine paintings and three sculptures.

The Pennsylvania Academy of Fine Arts, Philadelphia, acquired more than $10,000 worth of contemporary art, mostly oil paintings, from its 141st annual early in the year.

The New Britain (Conn.) Institute purchased 27 oil and watercolor paintings during 1945-46, bringing its permanent collection to about 250 works of 19th and 20th century American art.

FLORIDA WINS RINGLING MUSEUM

Florida obtained the most valuable art possessions owned by any of the states, it is said, when the John and Mabel Ringling Museum of Art was turned over to the state in July, along with the Sarasota home of the late circus magnate, whose death was followed by a decade of legal complications instituted by the Government and other claimants to his property. Old master paintings held by litigation in New York were returned to Sarasota. The museum and the home are valued at about $15,000,000. During the few months before Christmas, half the renovation program was completed, under direction of A. Everett Austin, Jr. Three galleries were open to the public, displaying French, Dutch, and Italian primitive paintings, and Gothic wood sculpture. Venetian paintings were moved to the Ringling residence, which is to be turned into a Venetian museum.

EXHIBITIONS

Exhibitions of high caliber increased in number throughout the country. Their objectives were varied. Besides the many museum shows assembled to enlighten the public, there were exhibitions to raise funds for charities, to celebrate anniversaries, to honor living artists or to commemorate some who had passed, to inaugurate new galleries or buildings, and to fulfill other equally valid purposes.

METROPOLITAN DIAMOND JUBILEE

The Metropolitan Museum of Art, New York City, celebrated its 75th anniversary with the reopening, May 24, 1946, of rearranged medieval galleries, and unveiling by Cardinal Spellman of several famous masterpieces sent over for the occasion by the Vatican, Bargello, and Louvre. The Louvre lent Delacroix' great painting "The Barricade," the first picture to be hung when the Louvre reopened after German occupation, a symbol of French resistance. M. Georges Salles, director of French museums, was present. Another feature of the celebration was an exhibition of paintings and sculpture entitled "Taste of the Seventies," closely hung, as was the custom those days. It included fine old masters, as well as sentimental romantic figures by Bouguereau and his contemporaries, and not a few landscapes.

In conjunction with the Metropolitan's 75th anniversary, Knoedler & Company, New York City, celebrated its centenary with an exhibition of paintings and prints illustrating American taste through the century of Knoedler sales; taste very creditable, although there was a proportion of work once fashionable, by artists now generally unknown. Knoedler & Company had engineered the $12,000,000 purchase from the Soviet Government, of some 30 Hermitage Museum paintings, including gems later given by Andrew Mellon to the National Gallery. From admissions to its centennial exhibition, Knoedler contributed $3,622 to the Metropolitan Museum, which by the end of the year had received $1,053,506 in its jubilee fund drive.

BRITISH MASTERS

The Boston Museum of Fine Arts showed in April 1946 more than 250 paintings, watercolors, and graphic arts by Turner, Constable, and Bonington drawn from all available works throughout the United States and National Gallery of Canada. It was perhaps the greatest English landscape exhibition held in America prior to the loan from Britain in the fall.

The Albany Institute of History and Art opened in January 1946 an historical survey of painting in Canada from the 17th century to the present, including 71 paintings borrowed from Canadian institutions and private collectors. The show's popularity necessitated its extension to mid-March.

FRENCH MASTERS

Wildenstein Galleries, New York City, held outstanding exhibitions of French art: in April, the most comprehensive review of work by Paul Gauguin yet seen in the United States, a loan exhibition for the benefit of the New York Infirmary; in May, "French Paintings of the Time of Louis XIII and XIV" (17th century), one of the most important loan shows of the year, and held for the benefit of Caen Library Fund; and in November, a major display of work by Toulouse-Lautrec, for the benefit of Goddard Neighborhood Center.

Philadelphia Museum held a superlative retrospective exhibition of work by Corot in May and June, covering nearly half a century.

The Toledo Museum and the Art Gallery of Toronto cooperated for more than a year to assemble the outstanding exhibition, "Spirit of Modern France, 1745-1945," 84 works by 54 painters borrowed from more than 30 museums, galleries, and others in the United States, Canada, England, and France. It was shown in Toledo in November and December, in Toronto in January 1947.

The most extensive exhibition of French art was "French Fortnight," part of a campaign to raise funds for "American Aid for France," which began Dec. 26 and continued into January 1947. A panorama of French art occupied seven New York City dealers' galleries: Wildenstein, an admirable group of paintings from 14th through 16th centuries; Knoedler, late 16th century to Cezanne; Paul Rosenberg, an all-loan outstanding show of paintings by Manet; Bignou, paintings by Rouault (disappointing) and Bonnard (excellent); Carroll Carstairs, group of Impressionists and modern French; Durand Ruel, well-selected Renoirs, one of which was sold by its owner to another collector for $125,000, which was given to American Aid for France, which seeks a fund of $2,150,000. Duveen, the 7th gallery, showed French interiors and furniture.

The Santa Barbara Museum of Art celebrated its 5th anniversary in June with an exhibition of paintings, mostly School of Paris, lent by Wright S. Ludington.

The Museum of Modern Art, New York City, having invited seven well-known collectors to lend their favorite pictures for a summer exhibition, revealed that they had marked preference for Europeans, chiefly "School of Paris," and that they had cautiously bought works by well-established contemporaries. Of 59 paintings shown, only five were by Americans, while Picasso alone was represented with five.

OTHER OLD MASTERS

"Caravaggio and the Caravaggisti," an impressive exhibition held at Durlacher Gallery, New York City, early in 1946, illustrated the influence of the Italian master on Spanish, Dutch, Flemish, and French painting.

Forty-three paintings by Rubens and Van Dyck, borrowed from as many sources, were shown at the Los Angeles Museum toward the end of the year, along with a supplementary display of 17th century Dutch, Flemish, and Spanish painting. The Rubens section was said to be the largest collection of his paintings yet shown in this hemisphere.

Rembrandt was impressively represented in an exhibition of Dutch masterpieces at Koetser Gallery, New York City in March.

AMERICAN ONE-MAN SHOWS

Robert Feke, America's first important painter, was given his first one-man exhibition, two centuries after his career in the Colonies. Thirty portraits, nearly half of his known works, were shown at the Whitney Museum, New York City in October, the Heckscher Museum, Huntington, L. I. in November, and Boston Museum of Fine Arts in December, these three museums having collaborated in assembling the collection.

Asher B. Durand.—The 150th anniversary of Asher B. Durand, a pioneer American landscape painter, was celebrated in early autumn with an exhibition at the Harry Shaw Newman Gallery, New York City, which in July had an impressive show of paintings and drawings by Frederic Remington.

George Inness.—A definitive exhibition of 47 oil paintings and many drawings by George Inness, our first great landscape painter, was assembled and held by a trio of museums: the George Walter Vincent Smith Art Museum, Springfield, Mass. to celebrate its 50th anniversary; the Brooklyn Museum; and Montclair N. J. Museum (in his native city), the three displays extending from February to the end of June.

Albert Pinkham Ryder, now regarded as one of this country's three greatest 19th century painters, who never had a one-man show during his life, and very few since, was seen in a small but inclusive exhibition at Macbeth Gallery, New York City in April 1946.

Theodore Robinson, first American Impressionist, was commemorated by the Brooklyn Museum in November, with the first comprehensive exhibition of his paintings, half a century after his death.

George Bellows.—The Art Institute of Chicago had an exhibition early in the year, "George Bellows 20 Years After," 57 paintings and 76 graphic arts, covering his career from college to his death.

William Henry Singer, Pittsburgh painter who lived in Norway 30 years, was commemorated with an exhibition at Milch Galleries, New York City in February 1946.

John Steuart Curry helped to install at the Milwaukee Art Institute. the most comprehensive one-man show of his career, and by his sudden death Aug. 29, six days before the opening, turned it into a memorial which remained until Oct. 15.

Commemorating the late Newell Convers Wyeth was an exhibition held at Portraits Inc., New York, in October and November, of paintings by him and six younger members of his family: son, daughters, and sons-in-law.

Georgia O'Keeffe was the first woman artist to be honored with a solo exhibition at the Museum of Modern Art, New York, in May: 57 paintings ranging from 1916 to 1945.

Philip Evergood was given a large two-decade retrospective at A. C. A. Gallery, New York in April, so varied that it resembled a group show.

Boardman Robinson had a retrospective exhibition at Kraushaar Galleries, New York, covering not only his painting, but his earlier newspaper and magazine work.

E. Barnard Lintott, English-born artist, had a loan exhibition of more than 70 of his paintings covering a quarter century, at French & Company, New York, in October.

Marc Chagall, Russian-born artist, was given a retrospective exhibition at the Museum of Modern Art in April, covering more than four decades of his painting.

THEME SHOWS

Modern religious paintings shown at Durand Ruel Galleries, New York, in January, for the benefit of Grosvenor Neighborhood House, included works by such extreme modernists as Picasso, Rouault, Weber, and Dali.

"The Nude in Art" interpreted in paintings and drawings by old and modern masters, at Wadsworth Atheneum, Hartford, Conn. in January 1946, had important loans from other museums.

Portraits of illustrious members of the Lee family of Virginia, from Richard, who came to America in 1641, through subsequent generations, comprised an unusual loan exhibition at Knoedler Galleries, New York, for the benefit of the Robert E. Lee Memorial Foundation, in April. It maintains the ancestral mansion, Stratford Hall, as a national monument.

"Forty American Paintings, Colonial to Modern Times," a loan show selected from lists by 15 prominent museum directors, artists, and critics, inaugurated the new home of the Akron (Ohio) Art Institute in December, 1945. Albert P. Ryder was the only artist named by all 15.

Addison Gallery of American Art, Phillips Academy, Andover, assembled for autumn, 71 prize-winning paintings from 29 American exhibitions, 1945-46, with the objective of "analyzing and drawing some conclusions" on the jury systems of bestowing awards.

AMERICAN GROUP SHOWS

Modern Group.—Modernism dominated most of the important annuals and other group shows. It was apparent in a show of "Museums' Choice" of contemporary American paintings, held in February 1946 at the R. I. School of Design Museum of Art; it comprised three paintings from each of 17 leading museums.

The Whitney Museum of American Art, New York, assembled an exhibition of "Pioneers of Modern

Art in America," composed of several hundred works, mostly paintings by 34 artists, chiefly of the period 1910-18, who were influenced chiefly by Paris early in the century.

The annual "Iowa Summer Show" at State University indicated a rapid evolution toward modernism in the past year.

Pennsylvania Academy Annual.—The 141st annual of painting and sculpture at the Pennsylvania Academy of Fine Arts, although announced as a "return to the open jury system," was largely invited. The jury of modern artists selected a predominantly modern show.

The 5th Virginia Biennial in Richmond in spring, half invited, half juried, was markedly left of center.

The Art Institute of Chicago held the golden jubilee exhibition of "Artists of Chicago and Vicinity" in April; prizes totaling $3,475 were awarded to 16 artists. During the summer, the Institute held its 57th Annual American Exhibition, supplemented with three one-man feature shows by Jacob Lawrence, Alexander Calder and Karl Zerbe, all moderns.

Carnegie Institute, Pittsburgh.—Modernists took most of the prizes in "Painting in the U. S. 1946" the annual founders day show of Carnegie Institute, Pittsburgh, which was nevertheless a well-balanced exhibition with its proportionate share of conservatives.

The High Museum of Art, Atlanta, Georgia, inaugurated a Southeastern Annual of oil and watercolor paintings in October, and drew 700 entries from eight states.

Audubon Artists Group, New York, which in its five years of existence has become one of the largest art organizations in the United States, opened its 5th annual Nov. 24 in seven locations: the American Academy of Arts and Letters, and six 57th street dealers' galleries. It totaled 594 oil and watercolor paintings, and work in other media.

Whitney Museum's 1946 annual of contemporary American painting was markedly radical in character, including expressionism, abstraction, surrealism, romanticism, and fantasy.

VARIA

The late Louis Comfort Tiffany's 50-room Moorish mansion, Laurelton Hall, Cold Springs, L. I., which with 60 acres of woodland, gardens, lakes, recreation areas, and other buildings was a part of the Tiffany Foundation, where about 50 painters and other artists were guests each summer during the past quarter century, was sold at auction in September, ending the Foundation in its familiar form. Proceeds from the auction and earlier bequests are to be invested and income used for grants of cash to art students.

An innovation was announced in December, by Michael M. Nisselson, president of Amalgamated Bank of New York, *i.e.,* that it would finance the purchase of works of art by living American artists by any responsible person. The bank pays the full amount for the purchase and retains title to the work of art, until full repayment is made by the purchaser, who may have 18 months at 4 per cent interest, and gets immediate possession of the work.

AUCTION RECORDS

Public auction sales of art reflected the trend in prices throughout the country. According to the annual report of the Parke-Bernet Galleries, Inc. of New York, its 1945-6 sales of art and other personal property closed June 14 with an all-time record total of $6,684,045, accompanied by a steadily continuing rise in prices. Annually, for several years, this long-established auction house has broken its own previous records. During 1945-6, 20 per cent fewer lots were sold to a larger number of buyers, whose competition raised prices paid.

Ninety-eight sales were held at Parke-Bernet Galleries from September, 1945 to June 14, 1946. Paintings accounted for $1,210,216 of the total. Highest totals and most sensational prices for paintings were made by the Willys collection itemized in THE AMERICAN YEAR BOOK for 1945; 25

modern paintings from the collection of the late Sir William Van Horne, K.C.M.G., which fetched $221,500. (The National Gallery acquired from this sale, Ryder's "Siegfried" for $23,500.)

Besides the Willys items mentioned in The American Year Book for 1945, the following brought more than $20,000 each: Toulouse-Lautrec's "La Buveuse," $30,000; and his "Femme Rousse Assise Dans le Jardin de M. Forest," $27,500; Cezanne's "Portrait of the Artist's Wife," $24,500; and Bellini's "Madonna and Child," $21,000.

SCULPTURE

By Rose V. S. Berry
Art Critic and Writer

GENERAL

Sculpture has always been more readily understood than the other arts. It possesses a completeness, a nothing-left-unsaid quality in a statue, that not even the printed page can present with such satisfying brevity, and with its personal element, its subject matter taken from the life of mankind, from its beginning it has been impressive and convincing.

Art traditions of western nations were different. They sprang from the Greeks, who carved their religion, their philosophy, and life-story in marble. They assigned the attributes of man and nature to their statues, and a noncommittal remoteness to their gods. Austere dignity characterized Zeus. Knowledge was ascribed to Athena, or Minerva. Melancholy tenderness marks Demeter. Hermes, or Mercury, was lithe and prompt. Vulcan forged lightning and thunderbolts. Pluto ruled Hades. Ares was the god of war. Nike was the goddess of victory.

It was Danté, whom Carlyle called the "voice of ten silent centuries," who dispersed the pall of silence that enveloped Europe. The Divine Comedy—Hell, Purgatory, and Paradise of human experience, and the source for some of the greatest sculpture—gave to Italy its well formed language, making it the seat of Renaissance learning. Then, too, there was that superb organization, the Church, which has endured through the Dark Ages. The era of cathedral building added greatly to the religious element of sculpture when the subject matter began to include the Virgin, the Christ Child, the missions of Christ and his crucifixion, the Apostles, Saints, and great Church dignitaries. In addition there were the heavenly hosts and those of the condemned—the patriarchs, the angels, and the spirits of evil.

The Crusades; the fall of Constantinople which gave to the world many original Greek manuscripts; the discovery of gunpowder, better understanding of the compass, the invention of printing and the discovery of a New World, were all instrumental in the revival of learning which became a rebirth of Greek hellenism, with sculpture playing its part—actually being carried from Greece in ships. These happenings continued through the Renaissance which led into the Reformation, and the Reformation which terminated in Revolution, and the Revolution which in these last years has become world-wide, and in which current sculpture speaks. The record of 1946 supports this statement.

Today's sculptors flaunt defiance of restricting commands. In their art they tell of the world, what is in it, over it, and underneath. They portray man, his life and hazards. They toy with birds, reptiles, animals, plants, and trees. Moreover they carve, model, chisel, and weld from any medium they choose.

EXHIBITIONS

General.—Exhibitions listed in January 1946 numbered 143. Eight included sculpture, and five of the eight were in New York. In April, the height of the art season, 175 exhibitions were held, 20 of these including sculpture. Of the 42 which were given in New York, only four displayed sculpture.

Six Centuries of Painting and Sculpture.—A goodly display of sculpture was included in Six Centuries of Painting and Sculpture, exhibited by the Drey Galleries in New York. Such collections are of importance to all American observers. Regardless of today's revolutionary attitude toward Renaissance art, it was Ghiberti, Donatello, Verocchio, and Michelangelo, who charted the course of sculpture for all time, and their work has survived the criticism of centuries. In one way or another they touched all the problems: That of forsaking Ghiberti's bronze pictures with their atmospheric perspective; movement in sculpture; the power and weakness of detail; and to what extent homely truth should combat mere prettiness.

The National Gallery of Art featured sculpture in its opening of several new rooms.

Baltimore Museum of Art exhibited selected pieces of sculpture from the Modern Museum, New York.

Contemporary sculpture was shown in the Yale University Art Gallery, New Haven, Conn.

The Art Museum of St. Louis, presented a comprehensive study of modern sculpture and its origins.

The Corcoran Gallery, Washington, D. C. included many fascinating small bronzes in its exhibition of American Miniatures.

Ecclesiastic and Modern.—An unusual exhibition was given at the Palace of the Legion of Honor, in San Francisco, when older and more conservative examples of ecclesiastic sculpture were compared with modern compositions. The simplified stylistic treatment by modernists was surprisingly effective, religious and emotional without being sensational.

The Art Alliance of Philadelphia exhibited the contemporary sculpture of Pennsylvania's Guild Craftsmen.

College Student Work.—Pomona College and Mills College, both of California; Holyoke College of Massachusetts; and Swarthmore College, of Pennsylvania, included sculpture in their exhibitions of student work, which they held for their alumnae.

Newark Art Museum exhibited a large collection of sculpture, showing the change of taste in the passing years.

ONE MAN SHOWS

These included an exhibition of Madeline Park's sculpture in Massillon, O.; Harvey Park's sculpture at Woodstock, N. Y.; Leonard Schwart's work in Oberlin, O.; Alonso Hauser's collection at Minneapolis, Minn.; Joseph Larocque, at the Argent Gallery, in New York City. The aluminum sculpture of Mrs. Anna Hyatt Huntington was shown at Green Bay, Wis.; at the same time her small bronzes were exhibited at the Brooks Memorial Museum, Memphis, Tenn.

Other one man shows included an exhibition by Nat Warner, whose work has not been seen in seven years, and the naturalistic and abstract subjects of Glen Luz which were highly decorative. Henry Schonbauer's work dealt mostly with motherhood; however, a head of Beethoven in Honduras mahogany was his most outstanding piece. Charles Umlauf, well known in Texas and throughout the southwestern states, received New York's praise for his work in wood and stone. Harry Rosen's children portraits achieved youthfulness regardless of medium. José de Creeft presented his Pre-Phidian subjects in native stone, serpentine and white marble, onyx, obsidian, and Belgian granite.

The Brooklyn-born Charles Salerno made a first showing with 26 pieces, setting forth the grief and misery war had caused women. He achieved his purpose without sentimental weakness.

DONALD HORD

Donald Hord, of Santa Barbara, Calif., seldom misses giving his admirers something to remember. This year it was the Head of a Negro Girl cut in bluish-black obsidian—really volcanic glass. Broad treatment increased the sadness and racial beauty of massive features, a beauty that will remain timeless and monumental. Hord has rapidly accumulated honors. In 1941, he made the National Sculpture Society; in 1942, the American Academy of Arts and Letters; in 1943, the National Academy; and in 1945, he was appointed to a Guggenheim Fellowship.

DAVID SMITH

David Smith's one man show was assembled from ten previous exhibitions. He is as yet a specialist in his line; he has originated a style. With a welding torch, press, lathe, and drill, he makes steel his medium. Some years ago he attracted attention with his abstractions, described as "space-enclosing" rather than form expressed in volume. His recent work, however, is in no sense abstract. The theme is of current events clearly, even brutally expressed. From a series of medals of *Dis*honor, which were inspired by Medals of Honor that he saw in the British Museum, one, though made in 1937, is notable and of the moment. "Civilian Bombing," it is called. Houses are rocking and crumbling at the horizon line. In the foreground, a tall, unsupported expectant mother stands in agony. Flesh has been torn from her legs. The abdomen, ripped open into a five-point star, is the Caesarean setting for an unborn child. In a baby's high chair, at the mother's right, sits an upright bomb; significant of a lost generation, a child is impaled on the point of a bomb at the mother's left; this is inscribed with significant Greek letters. Storks flying about the mother's head and dropping bombs instead of babies make the final note of surrealism.

The "Rape," based upon war and modeled upon the classical "Leda and Swan" motif, is utterly repellent. It is not the mortal Leda giving herself to a beloved and irresistible god; it is a wretched, spent, reclining, unresisting Leda, yielding to masculine force portrayed in a clumsy cannon. "False Peace" is a startling conception as a bird that never was. Many of its feathers end in thorny tips. Its half-spread wings are barbed with bombs and rockets. Its long, outstretched neck ends in an angular head, while the beak in a murderous pincer-hold ends the life of the Dove of Peace. On one triangular-shaped club-foot the bird stands, displaying in the other foot which is uplifted the trophies of war that have been offered in false hope, to a False Peace. If one would forget war with David Smith they must turn to his "Cock-Fight," which he has achieved with superb tenseness.

ASSOCIATION AND SOCIETY EXHIBITIONS

The New York Society of Women Artists included some notable work by eight sculptors. Among them were Doris Caesar, Kermah Kallman, Clara Shainess, Mitzi Solomon, and Beatrice Stone.

The National Society of Women Painters and Sculptors had a sculpture section that was consistently good. The National Medal was given to the Latin-American Marie Del Prado, for her "Miners" carved in wood. The first cash prize was awarded Grace Turnbull, for a huge hippo head titled "Gracious Countenance." The second cash prize went to Ruth Nickerson, for a Child Head, a study in marble. An anonymous prize was given Katherine Lane for a tender, but capable "Sleeping Foal." A "Memorial," by Mitzi Solomon; "Animal Studies," by Rhys Caparn; a "Head," by Cleo Hartwig; and two figures of strange Mexican mystics, "The Penetente" and "Los Flagalantes," by Lu Duble, were outstanding.

The Whitney Annual featured the work of older and advanced sculptors, which added importance to that section of the show. Noguchi's "Figure," Esherick's "The Wallop," Louise

Nevelson's "Young Bird," and "The Widow," an ebony figure by Warren Wheelock, approached pure abstraction. Charles Umlauf, Lu Duble, Hugo Robus, Mitzi Solomon, and Nathaniel Kaz touched expressionistic emotion. The work of Zadkine and Trajan could be classed *tour de force.* Herbert Ferber's sculpture showed his admiration of David Smith, whose sculpture was notable. Appreciation of the Whitney sculpture exhibit was shown in immediate purchases. Sculptures by José de Creeft, Jane Wasey, Oronzio Maldarelli, Chaim Gross, David Smith, Alfeo Faggi, Dorothy Greenbaum, and Jo Davidson were purchased by the Whitney director for the Metropolitan. From its own funds, the Metropolitan bought examples of Herzl Emanuel, Antonio Salemme, and Elie Nadelman.

The Pennsylvania Academy of Fine Arts, through its jurors Heinz Warnecke, Herbert Hazeltine, and Warren Wheelock, awarded its Widner Medal to Waldemar Raemisch Pieta, in stone. Other sculptures favored were: "North Wind," by Hugo Robus; "Polynesian Eve," by Harry Rosin; "Birth of a Snake," by Charles Cutler; "Blues Player," by Seymour Lipton; "Spiders as Acrobats on a House," done in bronze, by Mary Callery.

NON-OBJECTIVE SUBJECTS

Artist-veterans returning from foreign lands have noted the readiness with which Americans have accepted and developed non-objective subjects, carrying them through to pure abstractions. Some of this output is only vaguely suggestive, much of it is clever, all of it will probably tend to liberate the tensity which is inherent in sculpture. Such comparisons as that which brought the work of Noguchi, Hare, Roszak, and Kairos together must be enlightening. Another collection of vital interest was that which pitted the sculptor against himself: The Zorach of today against the Zorach of 1918; Lachaise with Lachaise of 1919; Laurens of today with Laurens of "The Toilette" and "The Man With a Clarinet." The work of 20 years back included "A Head," by Henry Moore; "Dragon Motif," by the late John Flanagan; "Torso of a Woman," by Sam Cashwan; "The Slaves," by José de Creeft; and other examples by Ben-Shmuel, Charles Cutler, Mary Callery, Adolph Dioda, Henry Kreis, and G. L. K. Morris.

NEW PROJECTS

New projects include that of the Clay Club of New York; its Sculpture Canteen during the war attracted 1,650 service men. José de Creeft, Chaim Gross, Jean de Marco, Richmond Barthé, and Lu Duble, with others seek to enlarge their quarters and make such activities permanent.

By far the greatest project for the American sculptor and his art is that South Carolinian domain, composed of three large estates landscaped into one perfect setting—with every phase of architectural device and garden planting—for the 600 pieces of American sculpture with which it began. This gift of Mr. and Mrs. Archer M. Huntington is endowed with sustaining millions and other purchasing millions. The Huntingtons are modest. News of this memorial to American sculpture is almost impossible to acquire, but it is bound to become a national shrine to the art that has always found a hesitant progress along precarious paths.

JOHN FLANAGAN

The purchase, by the St. Louis Art Museum, of a "Girl With a Horse," by John Flanagan, revives the memory of an extremely gifted man. This particular example is one of his most sensitive compositions, wrought in limestone. It was sent to Green Acres School, Silver Spring, Maryland, to secure his daughter's tuition for the year, but, the great sculptor died by suicide before it was redeemed. Lovers of American sculpture, everywhere, will welcome back Flanagan's "Girl With a Horse," to be seen now in the St. Louis Art Museum.

F. D. ROOSEVELT STATUE FOR LONDON

English friends and grateful admirers of Franklin D. Roosevelt commissioned the Scottish sculptor, Sir William Reid Dick, to make a statue of the American President, which stands in Grosvenor Square, London. The first model—a figure standing and wearing a cape—was widely criticized, and protests are rife between the realists, who want the figure seated, and those, who from an artistic view want it standing. In America, the President's affliction, as such, was ignored; instead, the March of Dimes, a noble project was founded upon it. Furthermore, throughout the ages seated figures have found favor. The two best, maybe the most loved, portraits of Lincoln are seated: one, in Chicago, by Augustus Saint-Gaudens; the other in Washington, D. C., by Daniel Chester French. On behalf of any sculptor, it should be said he considers the years to come and the element of permanence.

THE OUTLOOK FOR SCULPTURE

What of sculpture in this period of readjustment from war and ruin? It is folly to assume that today's abstraction could adequately serve the need of the United Nations Educational, Scientific, and Cultural Organization, but with something to say, together with the craftsmanship of the modern sculptor, it is not unreasonable to expect that for the second time in the Christian era, sculpture may take a place comparable to the interpretation of Ghiberti's painter-like bronzes, Michelangelo's powerful suggestion, Leonardo's scholarship, Donatello's directness, and the mystery of Rodin's light and shade.

For the sake of 8,000,000 veterans, the group from which America's UNESCO freshmen will mostly come, a brief survey of sculpture is in order. It is not too much to claim for the art that, in its continuity, it presents an amazing account of mankind. The realism couched in sculptured form often caused it in ages past to be accepted as an actuality rather than as a symbol. The gods men fashioned for themselves were sculptured. There were reasons for that first commandment forbidding "other gods." This phase of the story is thrilling and variable.

The colossi of the ancient world merged into god-likenesses. The Great Sphinx, with its lion-body symbolic of power, is only one of Egypt's Pharaoh-portraits. Assyria and India had gigantic figures that endured for centuries. The Colossus of Rhodes, which took Chares 12 years to make, was only one of the Greek colossi. Others were: Zeus and Herakles by Lysippus; the Apollo by Calamis, and the better known Zeus of Olympia, Athena in the Parthenon, and Athena Promachos on the Acropolis, all three by Phidias. When these were lost the world had forgotten "graven images," though Japan made several enormously imposing statues to Buddha as late as 700 *A.D.*

The New World has only three sculptures comparable with the colossi just mentioned. Christ of the Andes, in South America, is one. The others are in the United States. Nothing in modern times has touched the magnitude of Gutzon Borglum's portrait group of Washington, Jefferson, Lincoln, and Theodore Roosevelt, carved on Mt. Rushmore, Black Hills, South Dakota. The third large statue (Liberty) is the work of Bartholdi, French sculptor. In significance and purpose, and its association with New York Harbor, however, it is decidedly American and becoming fundamentally more so as time passes.

As soon as fighting ceased, authorities in Paris took Venus of Milo and the Victory of Samothrace from their wartime hiding, installed them in their wonted places and threw open that small section of the Louvre to American soldiers. In a few days, hundreds of thousands of these New World guests had filed by the sculptured entities. They moved slowly in their long line, laughed, joked, and "clowned" as American boys would to hide an erstwhile dread and now an indescribable relief, but, as the statues came into view their merriment ceased. Only the shuffle of their feet was heard as voices were hushed and smiles left their faces. It was as if these men of a New World, which they had fought to save, had touched the ideals—the soul of Ancient Greece, in the Venus, pure, undefiled, and unapproachable, and the headless Nike of Samothrace whose windblown garments revealed the swiftness of her triumph even as her folding wings told of the price of her victory, a cost each and every one of the American soldiers knew.

Weeks later, at a long journey's end, American men and boys glided into calm shore waters to disembark at their largest home port. They have thrilled at New York's astounding skyline. But their American hearts must have missed a beat as their American eyes rested upon the youngest of the world's colossi—Liberty holding her torch aloft. In no way is she comparable with Venus of Milo, or with Nike of Samothrace, save that the latter also served her people, with a difference in the task. Liberty as a fixed, muted, voiceless stone has accomplished her trust with a gesture that gave her a name: *Liberty Lighting the World* with *Time* running out.

MUSIC AND THE OPERA

By Warren H. Potter

Editorial Writer, *Musical America*

GENERAL

The first post-war year brought a tremendous expansion to the profession of music. Men returning from the battlefields and outposts of the world rejoined the orchestras and choruses they had left years before. New orchestras swelled some 150 already in existence; recitalists returned to their peaceful pursuits and the lifting of restrictions imposed upon international relations proved a stimulus to the circulation of music and artists between countries hitherto cut off by the rigors of war.

In Pittsburgh, June 19, managers of 20 major orchestras with yearly budgets of $100,000 or more, ascertained that their combined attendance had reached the phenomenal number of 5,000,000, an increase of 1,500,000 over the previous year.

Among the major musical figures to go abroad in 1946 was Arturo Toscanini, who returned to Italy to conduct at the LaScala Opera House in Milan, reconstructed with the aid of American funds. He was preceded to Europe, however, by Karl Krueger, the first guest conductor from America to appear there since the war, who left New York on March 20 for an extended tour abroad. Leonard Bernstein, conductor; Samuel Barber, composer; Eugene List, pianist, and his wife Carroll Glenn, the violinist, represented the United States at the International Festival of Music held in Prague, Czechoslovakia, during the summer.

Maurice Abravanel visited Australia where he conducted all the major orchestras; Otto Klempèrer flew to Europe to conduct many major orchestras, and Robert Casadesus, the eminent pianist, returned to France to reorganize the Fontainebleau School of Music, of which he was appointed director, and to play abroad. Zino Francescatti, violinist, returned to his native France for the first time in five years, and England exported to America Sir Thomas Beecham, Sir Adrian Boult, and Benjamin Britten.

During the week of Oct. 21-26, the International Confederation of Societies of Authors and Composers (CISAC), and the Inter-American Federation of Societies of Authors and Composers (FISAC), met concurrently in the Library of Congress. This was the first time either of the groups had convened in this country. For ICSAC, it was its 15th annual meeting and the first since 1938.

Perhaps the surest index to the

trend of the time was the expansion of the managerial field which George Engles re-entered after an absence of five years and to which he returned as president of the Consolidated Concerts Corporation. Walter Preston and Larry Fitzgerald revived the Wolfsohn Bureau, said to be the oldest musical agency in the world, and James A. Davidson formed his own concert bureau, the James A. Davidson Management, Inc., on Nov. 2. Meanwhile, National Concert and Artists Corporation and Columbia Concerts were busily engaged in organizing tours abroad for the artists under their auspices as rapidly as possible and endeavoring to establish in disorganized Europe, a network similar to the Civic and Community Concert services in the United States.

Educators awakened with renewed vigor, and the Music Teachers National Association held its 70th annual meeting in Detroit, beginning Feb. 20. The National Association of Schools of Music also met in Detroit, Feb. 19-20, and the Music Educators National Conference and National Catholic Music Educators Association held their tenth biennial convention in Cleveland, March 26-April 2. The Juilliard School of Music and the Institute of Musical Arts set the Army and Navy a good example by amalgamating under the name of the Juilliard School of Music. Detroit, a musical convention city in 1946, was also the scene of an encouraging new development: the First Congress of the Fellowship of American Composers, held there from May 6-10.

OPERA AT THE METROPOLITAN

During 1946 Scandinavia infused new life into the Metropolitan Opera performances with the export from Sweden of several of her principal artists, chief among these Torsten Ralf, Joel Berglund, and Set Svanholm. The latter's appearances in Wagner's music-dramas as Tristan, Siegfried and Lohengrin and as Radames in Verdi's "Aïda" achieved an artistic height not often attained at the Metropolitan or any other opera house. The year began, tamely enough, with a production of "La Bohème" on Jan. 1, but four days later, on Jan. 5, Puccini's "Il Tabarro" (The Cloak) was revived after a lapse of a quarter of a century. Bracketed with the short work was another revival, "Don Pasquale," which had not been heard for five years. Principals in the "Il Tabarro" cast were Licia Albanese, Frederick Jagel, and Lawrence Tibbett. The work proved popular with the public in subsequent performances, though in setting, direction, and musical content it lacked lasting value.

Other works restored to the repertory were "Madame Butterfly," on Jan. 19, kept from production during the war by the embarrassing nature of its libretto, and the return, on Jan. 12, after a year's absence, of "The Tales of Hoffmann," with the sterling French singer, Marital Singher, dominant. Another superb characterization was that of Joel Berglund as Hans Sachs in "Meistersinger" on Jan. 9, a carefully conceived and warmly executed performance in the great tradition of Van Rooy, Feinhals, Whitehill, and Schorr. Another acquisition by the opera house management was that of George Szell, the eminent orchestral conductor, whose readings of "Meistersinger," "Rosenkavalier," "Götterdämmerung," "Don Giovanni," and "Otello" were nothing short of superb.

Other additions of importance to the roster of singers in 1946 were those of the American artists Robert Merrill and Mary Henderson; the Chilean tenor, Ramon Vinay; Florence Quartararo; and Giacomo Vaghi. The annual "Ring Cycle" was not given in the Spring of 1946, a loss occasioned, as the management announced, by the commitment of its chief Wagnerian artists to other fields. Bearing the principal burden of the Wagner music-dramas in the winter season of 1945-46 were the soprano, Helen Traubel, and tenor, Lauritz Melchior, though in the Fall of 1946, Set Svanholm lightened Melchior's arduous duties. The latter was honored on Feb. 17 as he celebrated his 20th year at the Metropolitan, and a month later, the eminent bass, Ezio Pinza, also observed the completion of his second decade with the institution.

In the spring the Opera conducted a radio poll, giving 123,000 members of its air-audience the opportunity to choose six operas to be performed in the following season. The winners were "Aïda," "Carmen," "Traviata," "Hansel and Gretel," "Boris Godunoff," and "Der Rosenkavalier." The Metropolitan Opera Guild presented the management with a cheque for $25,000 to defray the expenses of a new production in 1946-47, and after its annual spring tour, visiting 12 cities throughout the nation for a total of 47 performances, the management announced that, for the second year, it had achieved a profit of $4,370 for 1945-46, owing to its post-season tour.

During the late summer, because of a conflict with the American Guild of Musical Artists concerning pay and working conditions, the fall season lingered for some weeks dubiously in the balance, but negotiations were resumed, relations satisfactorily patched up, and "Lakme," with Lily Pons, or Lily Pons with "Lakme"—since they are almost synonymous now—opened the new season Nov. 11. Louis Fourestier made his debut as conductor at this first performance of the 18-week season. Raoul Jobin sang opposite Lily Pons and Irene Jordan made her debut as Mallika on opening night.

Notable performances and debuts in the Fall season were the first appearance of Set Svanholm with the company as Siegfried on Nov. 15, perhaps the chief artistic event of the year, and the debut on the same occasion of Fritz Stiedry as an excellent acquisition by the conductorial staff. Additional performances of exceptional artistic interest were Svanholm's interpretations of Radames in "Aïda" on Dec. 5 and his first Tristan on Nov. 20. A fall revival was that of Mozart's "Abduction from the Seraglio," Nov. 29 with Emil Cooper conducting and Charles Kullman, Eleanor Steber, Dezso Ernster, Pierrette Alarie, and John Carter among the principals. Felix Knight was engaged by the management and made his debut in "The Barber of Seville," Nov. 30; Fritz Busch (debut) conducted "The Marriage of Figaro" for the first time, Nov. 13, and "Trovatore" was welcomed back to the repetory after a year's absence, Dec. 7. Mussorgsky's great "Boris Godunoff" also re-entered the lists on Nov. 21.

Jerome Hines, a very promising young artist, made his debut as Mephistopheles in "Faust" Dec. 14, and earlier, Nov. 16, the French singer Renée Mazella and the American Claramae Turner appeared for the first time at the Metropolitan as Marguerite and Marthe, respectively, in the Gounod opera.

METROPOLITAN'S NEW SEASON PLANS

The management announced that it would produce during the 1946-47 season the Bernard Rogers-Norman Corwin opera, "The Warrior," based on the Biblical story of Samson and Delilah, the first American novelty scheduled since 1941-42. At its annual fall luncheon, the management and board of directors discussed plans for a new and larger opera house and disclosed the project for a home in Los Angeles for the Metropolitan Opera in its visits to that city, an auditorium to be constructed at a cost of between $20,000,000 and $30,000,000. Apart from these plans, still in a nebulous stage, there were several changes in management, Cornelius N. Bliss resigning as chairman of the board of directors. He was succeeded by George A. Sloan. Reginald Tonry was named house manager, succeeding Hugh Brown who served in that capacity for 25 years, shortly after the opening of the Fall season. Broadcasts were begun Nov. 16 and were to continue throughout the 1946-47 season under the sponsorship of Texaco and over the CBS network on Saturday afternoons. Edward Johnson continues as general manager of the Metropolitan.

CHICAGO OPERA

The Chicago, San Francisco, New York City Center, and other, smaller opera companies whose seasons are carefully scheduled not to conflict with that of the Metropolitan Opera, also enjoyed unusually active seasons. Both the Chicago and San Francisco companies draw largely upon the roster of the New York organization for their singers, with slight local variations, but their general casting and production bear the same eclectic stamp as that of the Metropolitan.

A gala production of "Aïda" began the Chicago Opera's season on Sept. 30 with Fausto Cleva again General Artistic Director. The repertoire contained eight Italian operas, three French, two American and two German. The native works were Gian-Carlo Menotti's frothy and amusing "Amelia Goes to the Ball" and Gruenberg's "Emperor Jones," with Lawrence Tibbett, both given Oct. 4. Ferruccio Tagliavini, later to appear at the Metropolitan Opera, was imported from Italy to make his debut in "La Bohème" Oct. 2. The season closed with a revival of Thomas' "Mignon" Nov. 9, and in between the two dates were given "Tristan," "Rigoletto," "Lucia di Lammermoor," "Madame Butterfly," "Tosca," "La Gioconda," "Carmen," and "Samson and Delilah." The conductors for the season were Erich Leinsdorf, Fritz Stiedry, Nicolas Rescigno and Fausto Cleva.

SAN FRANCISCO

The San Francisco Opera Company, Gaetano Merola, General Manager, embarked Sept. 7 upon the most extensive season in its history, giving 50 performances between the opening date and Nov. 3. Four works were given in Portland, Ore., beginning Sept. 7, including "Carmen," "La Bohème," "La Traviata," and "Lohengrin." Then the company moved to Seattle offering the same four works there on Sept. 12-15. The San Francisco season proper was launched on Sept. 17, and it was on the West Coast that Set Svanholm made his American debut, appearing in the title role in "Lohengrin," Sept. 17. The series extended over a period of five weeks, the last two being played in Los Angeles starting Oct. 21. A total of 17 operas was given, including in addition to those mentioned, "Boris Godunoff," "Tristan," "Romeo and Juliet," "Madame Butterfly," "La Forza del Destino." "Fidelio," "Der Rosenkavalier," "Lakme," "Lucia di Lammermoor," "Il Trovatore," "The Marriage of Figaro," "Rigoletto" and "Don Pasquale." New to the company were Regina Resnik, Maria sa Earp, Astrid Varnay, Mario Berini, George Czaplicki, Nicola Moscona, Kenneth Schon and Set Svanholm. Conductors were Merola, George Sebastian, William Steinberg, Pietro Cimara, and Paul Breisach.

NEW YORK CITY CENTER OPERA

The New York City Center Opera, one of America's most enterprising opera companies, began its spring season, May 10 with "Rigoletto" and followed that work with productions of "La Bohème," "Madame Butterfly," "Carmen," "La Traviata." During the short series which concluded June 1, several notable singers made their debuts. Camilla Williams, a Negro, sang the role of Butterfly in the Puccini work, winning high praise, and Enzo Mascherini made his first appearance in "La Bohème." The company continued its good work in the fall, offering opera four nights a week for 10 weeks under the direction of Laszlo Halasz. A highpoint of the season was the performance of Richard Strauss' delectable chamber opera, "Ariadne auf Naxos," given its first American performance, Oct. 10. A truly memorable production, it enlisted the services, as chief singers, of Ella Flesch as Ariadne, Virginia MacWatters as Zerbinetta, Ralph Herbert as Harlequin and Polyna Stoska in the role of the composer. Halasz conducted. Another notable service to music was the revival by the company of Tchaikovsky's "Eugen Onegin" Nov. 14 with William Horne, Ivan Petroff, and Brenda Miller as principals.

In the preceding spring, Columbia Theater Associates gave a performance of Giovanni Paisiello's "The Barber of Seville," notable as the historic predecessor of Rossini's deathless buffa. Also in New York, the Juilliard School of Music revived Weber's "Der Freischütz" from Dec. 13 to 17, a production interesting more as a novelty than for excellence of production.

OPERA IN OTHER CITIES

The New Orleans Opera House Association regained much of its past glory and traditions in 1946 with performances of Gian-Carlo-Menotti's "The Old Maid and the Thief" and "Pagliacci" on Jan. 17 and 19 and later "Hansel and Gretel," "Manon," "Aïda," "Traviata," and in the Fall, opening on Oct. 11 with "Butterfly" followed by "Traviata," "Aïda," "La Bohème" and "Carmen." Walter Herbert is general director and conductor, and the new president is Hugh M. Wilkinson.

The Fort Worth Civic Opera Association, a new organization, gave "La Traviata," Nov. 25, a community project backed by the public to the extent of $10,000.

The San Antonio Opera Festival was held Feb. 19-24, netting a $15,500 credit for its sponsor with "Carmen," "Tosca," and "La Traviata." A new organization was also formed in Pittsburgh under the name of the Civic Light Opera Association with a season of light opera in June. A colorful festival was that in Central City, Col., which opened on July 6 with "The Abduction from the Seraglio" by Mozart and continued for 25 performances, alternating with "La Traviata." The works were produced by Frank St. Leger and staged by Herbert Graf. and the season was completed July 28.

Cincinnati Summer Opera, under the general direction of Fausto Cleva, observed its 25th anniversary season, opening June 30 for a six-week season including 18 different operas.

TOURING OPERA

Chief among the touring opera companies is that of the Philadelphia LaScala which gave performances in Philadelphia, Baltimore, Washington, Buffalo, Detroit, and Pittsburgh. The principal novelty of its spring season was a revival of Giordano's "Andrea Chenier" on March 21. A total of 49 performances of works from the standard repertoire was given at home and on tour under the artistic direction of Francesco Pelosi, general manager. Giuseppe Bamboschek was musical director and Benjamin Altieri, stage director. H. Birchard Taylor was elected chairman of the board of directors. The National Grand Opera Company, Giorgio D'Andria, general director, gave its annual festival for the Essex County (N. J.) Symphony Society, and on May 27 in Newark began a series of three performances of "Madame Butterfly," "Faust," and "Aïda." The group also offered on tour "Aïda" and "Butterfly" in New Haven and "Tosca" in Hartford, Conn. Late in September, the ensemble began its regular transcontinental tour. During the fall, the Charles L. Wagner Opera Company made its annual eight-week tour in October and November, offering the one production, "Il Trovatore." Fortune Gallo's San Carlo Opera Company made its 35th annual nationwide tour, and the Philadelphia American Opera Company made its debut in that city Oct. 24 with Mozart's "The Abduction from the Seraglio," a work which proved popular with almost every American company during the year. Vernon Hammond is the director of the American Opera Company.

BERKSHIRE MUSIC FESTIVAL

Though it is the youngest of all the major American music festivals, the annual Berkshire Summer Music Festival now assumes first place by virtue of the importance of the music performed and ensembles participating. In 1946 the Festival was held at the organization's home at Tanglewood in Lenox, Mass., in conjunction with the Music Centre School, on July 25-28, and Aug. 1-4, 8, 10-11. Serge Koussevitzky led the Boston Symphony in the American premieres of Shostakovich's Ninth Symphony and of Benjamin Britten's challenging opera, Peter Grimes, for which the composer came to America. Major soloists were heard with the orchestra in the course of the nine concerts. Prior to the Festival proper, four chamber music concerts devoted to Bach and Mozart were given at the Music Centre.

OTHER MAJOR FESTIVALS

Among other major festivals were the Bethlehem Bach Festival, held in Bethlehem, Pa., May 17 and 18 and conducted by Ifor Jones; the 87th annual Worcester Music Festival, enlisting the Philadelphia Orchestra under Eugene Ormandy and noted soloists, in Worcester, Mass., opening Oct. 19 and bringing four familiar programs; and the 53rd annual May Festival in Ann Arbor, Mich., May 2-5. Attendance for the Ann Arbor passed the 30,000 mark. The Philadelphia Orchestra was the guest ensemble for the 11th consecutive season, and a dozen soloists and the 350-voice choral union and youth chorus also participated.

Under the direction of Richard Bales, the third American Music Festival was held in the National Gallery in Washington, D. C., in March; Baldwin-Wallace offered its 14th annual Bach Festival in Berea, O.; Brevard, N. C., held a four-day festival in August; Cincinnati observed its 36th biennial May Festival under Eugene Goossens' direction from May 7-11 in a series of five concerts; Bach was the theme again of the Carmel, Calif. annual festival held for one week in July; and St. Louis offered Bach works at its festival under William B. Heyne's direction on May 2-4.

Gian-Carlo Menotti's opera "The Medium" was given its world premiere on May 13 at the Columbia University Festival of Contemporary American Music, held May 10-13. The NBC Symphony, Martha Graham and her dance group participating and a program of music by Charles Ives, was given as a tribute to the 72-year-old composer. The Eastman School of Music's 16th annual Festival of American Music, Howard Hanson, director, was given in five evening and one afternoon performances at Kilbourn Hall, Rochester, N. Y., April 12-17 when first performances were given of music by Roy Harris, Wayne Barlow, Howard Hanson, Robert Palmer, Bernard Rogers, and many other composers. A Three-Choir Festival was held at Temple Emanu-El in New York City on March 24-30, devoted to Eurasian and the American West in song and dance.

One of the most colorful of American festivals returning to the scene after the war was the Colonial Williamsburg double series of three concerts which took place in Williamsburg, Va., on May 13, 15, 16, and 18 and again on six evenings in October, the festival being offered twice annually.

NEW YORK PHILHARMONIC-SYMPHONY

The oldest orchestra in the United States in 1946 fulfilled its most extensive year and for the first time in its history inaugurated a series of popular concerts in Carnegie Hall at the conclusion of its Spring season on May 4. During the course of the "Pops," as they were called following the example of the Boston Symphony and other major orchestras, 35 conductors and 200 soloists were heard in 49 concerts which ended on June 22. Earlier in the year, Igor Stravinsky conducted the first performance of his new symphony as guest with the Philharmonic on Jan. 24, and Roy Harris offered the first performance of his "Memories of a Child's Sunday" on Feb. 21. Artur Rodzinski was the regular musical director of the orchestra for the 1945-46 and 1946 seasons. At the close of its "Pop" series, the orchestra embarked upon its usual course of 38 concerts at the Lewisohn Stadium, appearing at the Stadium for an 8-week period and bringing noted guest soloists and ensembles before its summer public between June 17 and Aug 11. The summer budget was estimated at $260,000.

Artur Rodzinski was re-engaged as musical director and conductor at the outset of the 1946 season with Charles Münch, Bruno Walter, Leopold Stokowski and George Szell enlisted as guests. Ninety-nine concerts and 28 soloists were scheduled for the 105th year of the ensemble with Rudolph Ganz conducting the Young People's series and the Sunday concerts broadcast over the Columbia Broadcasting System under the sponsorship of the United States Rubber Company. Mr. Rodzinski launched the fall-winter programs on Oct. 3 and on Oct. 31 one of the year's notable concerts was offered when Maggie Teyte and Raoul Jobin were soloists with the orchestra in excerpts from Debussy's "Pelléas and Mélisande," an event little appreciated by the general public. American premieres were offered on Oct. 10 of Manuel Rosenthal's Musique de Table and of Barraud's Piano Concerto on Dec. 5. Heard also for the first time in America were the Noce-Villageoise of Lully-Rosenthal; Symphony No. 3 for Strings by Jean Rivier and Rosenthal's La Fête du Vin, all given under the baton of Manuel Rosenthal on Dec. 5. The Philharmonic also announced that at the close of its 105th season, it expected to make a Spring tour, offering 28 concerts between April 14 and May 11, with Rodzinski conducting 17 concerts and Stokowski 11. However, Rodzinski resigned suddenly on Feb. 4, 1947, effective immediately. Charles Triller was named president of the orchestra, succeeding Marshall Field.

NBC SYMPHONY

During 1946, the NBC Symphony again brought Arturo Toscanini as its chief conductor in its broadcasts from 5 to 6 P.M., EST. The noted conductor offered a program on Jan. 27 in honor of the 190th anniversary of Mozart's birth and the 45th of Verdi's death and on Feb. 3 and 10 led a 50th anniversary performance of Puccini's "La Bohème," a luminous recreation of the familiar score. The following season, on Dec. 1 and 8, he performed the same service for Verdi's "La Traviata." During the summer, the orchestra was conducted by Frank Black, Franco Autori, Leonard Bernstein, Fabien Sevitzky and Vladimir Golschmann. Toscanini offered 16 programs between Oct. 27 and Dec. 8 and Fritz Reiner assumed the baton on Dec. 15. Dame Myra Hess was soloist in a notable performance under Toscanini when she performed the Beethoven C Minor Piano Concerto on Nov. 24.

NEW YORK CITY SYMPHONY

Continuing in the Fall and beginning the second year of its life at the City Center, the New York City Symphony under Leonard Bernstein began a provocative series of programs on Sept. 23. The concerts continued for 10 weeks, through Nov. 26, interspersed with performances at the Center by the Opera Company. During the year Mr. Bernstein brought to first performance Marc Blitzstein's controversial work, "The Airborne" which was well received; David Diamond's Second Symphony, and other contemporary music by native composers, including John Lessard's "Box Hill Overture"; "Ode to the Milky Way" by Vladimir Dukelsky, and Revue for clarinet and orchestra by Alex North, all offered at the Center on Nov. 18.

BOSTON SYMPHONY

At the conclusion of its 1945-46 season under the baton of Serge Koussevitzky, during which it gave 60 subscription concerts, and visited Providence, Washington, D. C., New York, and New England towns on tour, the Boston Symphony began its 61st season of "Pop" concerts under Arthur Fiedler, continued with 17 Esplanade programs on the borders of the Charles River which were heard by 345,000 Bostonians, and offered 9 Berkshire Festival concerts. The ensemble opened its 66th season and 1946-47 series under Dr. Koussevitzky on Oct. 4. The schedule was again as heavy as that of the previous season with equally as many concerts, though Dr. Koussevitzky announced his intention to conduct fewer concerts, and to relinquish the baton to Richard Burgin his assistant and concertmaster of the orchestra and to guest conductors. On Nov. 29 the orchestra offered the American premiere of Camargo Guarnieri's Latin American Symphony and earlier in the year, in March, gave the first American performance of orchestral excerpts from Britten's opera "Peter Grimes," as well as the initial performance of the complete opera at the Berkshire Festival. Shostakovich's Ninth Symphony was also given its premiere by the Boston Orchestra and both works were introduced by the ensemble to other cities on tour. Allis-Chalmers again sponsored the orchestra's broadcasts over an CBS network from 9:30 to 10:30 P.M., EST, starting Oct. 8.

PHILADELPHIA ORCHESTRA

The Philadelphia Orchestra, Eugene Ormandy, conductor, completed its 1945-46 season on April 27, the 46th of its existence. An aggregate total of 400,000 attended the basic series of concerts in the Academy of Music, Philadelphia, and the various series in New York, Washington and Baltimore. To the start of the transcontinental tour, which began April 29 and ended June 9 with 39 performances in 30 cities, the schedule embodied 129 concerts. Early in the season, Ormandy offered the first hearing of Bartok's Piano Concerto No. 3 on Feb. 8 with Gyorgy Sandor as soloist. The orchestra began its summer series in Robin Hood Dell under Dimitri Mitropoulos on June 24. The 17th season of Dell concerts occupied seven weeks for a total of 28 concerts, Mitropoulos leading 19 of the 28 programs. The 1946-47 season opened on Oct. 4 with Ormandy again as musical director and Harl McDonald, manager. 17 major soloists were listed and as guest conductors, Bruno Walter, George Szell, Igor Stravinsky, Dimitri Mitropoulos and Alexander Hilsberg, concertmaster and assistant to Ormandy. Twenty-eight Friday afternoon and Saturday evening concerts, as well as 10 Monday evening programs, five Youth, five Children's concerts, 6 performances at the Worcester Festival and a November tour of the mid-west formed the heavy schedule. The orchestra's playing personnel included 104 men and every Saturday, throughout the season, the orchestra broadcasts over a WABC-CBS network from 5 to 6 P.M., EST.

CHICAGO SYMPHONY

A Brahms cycle, under the baton of Désiré Defauw, was of principal interest in the Chicago Symphony's 1945-46 season. Early in the year, Hans Lange, associate conductor, led the orchestra on a tour of 17 mid-western cities, beginning on Jan. 12. At the completion of its winter series, the orchestra began its 11th season of programs at Ravina Park on June 25, offering six weeks of symphonic music under five conductors and enlisting the aid of noted soloists and two chamber music ensembles. The orchestra, again under Defauw, began its 56th season on Oct. 3, a season that was to be distinguished by such occasions as the appearance of Dame Myra Hess as soloist with the orchestra on Oct. 31 after an absence of seven years. The premieres of Max Wald's "In Praise of Pageantry" and Arne Oldberg's Violin Concerto were given on Nov. 7. The roster of guest conductors included George Szell, Charles Münch, Bruno Walter and Fritz Busch. Concerts were given in the orchestra's home, Orchestra Hall and George Kuyper remains its manager. Approximately 106 concerts were scheduled for 1946-47.

CLEVELAND ORCHESTRA

Of greatest importance to Clevelanders was the acquisition of a new conductor, George Szell, who succeeded Erich Leinsdorf on Oct. 17. Szell increased the size of the orchestra by 11 members to 94, including two apprentice conductors. Three guest conductors were engaged: Bruno Walter, Georges Enesco and Igor Stravinsky and an even dozen of soloists. Szell directed 15 of the 20 pairs of concerts scheduled; Rudolph Ringwall, his associate, two; and the guests, one pair each. The 1946-47 season marks the orchestra's 29th year. C. J. Vosburgh continues as orchestra manager and its concerts are given in Severance Hall. The orchestra began its broadcasts on Oct. 19 and is heard on Saturdays over the MBS network from 6 to 7 P.M., EST, on Saturdays.

LOS ANGELES PHILHARMONIC

At the close of the Los Angeles Philharmonic's 1945-46 season, during which it offered 46 regular and 13 Youth concerts, it was announced that Alfred Wallenstein had been re-engaged as regular conductor for four more years with John Barnett as assistant conductor. The West Coast ensemble scheduled for its new season, a series of 90 concerts, a sizable increase over the previous season. Of these, 17 pairs are given in the Philharmonic Auditorium and 50 out of town. Charles Münch and Lukas Foss were chosen as guest conductors, and nine major soloists were engaged to appear during the season. Wilfred L. Davis remains the orchestra's manager.

SAN FRANCISCO SYMPHONY

With its 2,320th concert on April 13, the San Francisco Symphony, Pierre Monteux, conductor, completed its 34th season of 32 concerts for 1945-46. Shortly thereafter, its management announced that the orchestra planned an extensive tour of eight weeks' duration in the United States and Canada under the baton of Monteux, the first such tour undertaken by the orchestra. James Sample was appointed associate conductor for the tour. For 1946-47, the Symphony scheduled 16 pairs of Opera House concerts, 15 Thursday night "previews," four Youth concerts, led by Rudolph Ganz, two Youth concerts under Monteux and the engagement of 15 major soloists.

DETROIT SYMPHONY

With the conclusion of its 20th season and final concert of the 1945-46 season on March 14 in Masonic Temple, the Detroit Orchestra made its last appearance in that auditorium. Henceforth, all activities were to be concentrated in the Music Hall. At the opening of the new year on Oct. 24, Karl Krueger, the orchestra's regular conductor led the ensemble in the first concert of 18 pairs in the Music Hall. Henry H. Reichhold remains the president of the orchestra and its principal backer. Approximately 20 Youth concerts were scheduled by the orchestra for 1946-47. The orchestra also embarked upon a new Sunday evening broadcast series over an NBC network from 8 to 9 P.M., EST.

CINCINNATI SYMPHONY

In the last days of 1946, Thor Johnson was appointed musical director of the Cincinnati Symphony to succeed Eugene Goossens, who recently accepted the post of conductor of the Sydney, Australia, Symphony. Mr. Johnson will become director when Mr. Goossens retires in April. Earlier in the year, the orchestra was conducted by Mr. Goossens on a three-weeks' Southern tour at the conclusion of its 1945-46 season. During its formal season it gave 40 subscription concerts and enlisted the services of Leonard Bernstein as guest conductor, and the French conductor, Paul Paray. The opening concerts of the 1946-47 season were led by Vladimir Golschmann and again, 40 subscription concerts were scheduled. J. M. O'Kane remains the orchestra manager and concerts are held in the Music Hall.

MINNEAPOLIS SYMPHONY AND ST. LOUIS SYMPHONIES

The Minneapolis Symphony, Dimitri Mitropoulos, conductor, made its annual visits to Chicago as well as offering a course of 28 concerts and six Youth programs in its home city. The guest conductors Leonard Bernstein and Erich Leinsdorf also appeared with the orchestra during the season. Arthur J. Gaines remains the manager of the orchestra which gives its concerts in the auditorium of the University of Minnesota and enlists major soloists. The St. Louis Symphony, Vladimir Golschmann, conductor; William Zalken, manager, gave the 20th and final pair of concerts of its 1945-46 series on March 1 and 2. Its 67th season of subscription events was opened on Oct. 18 by Mr. Golschmann. The ensemble's 1946-47 series enlists 15 major soloists for its programs in the Kiel Opera House.

INDIANAPOLIS SYMPHONY

With the opening of the Indianapolis orchestra's 1946-47 series. Fabien Sevitzky, conductor, marked his tenth anniversary as musical director on Nov. 7. 86 concerts were scheduled for the 21-week season including NBC broadcasts and 37 out-of-town concerts, a tour list which includes a second appearance in Carnegie Hall, New York, the seventh in Chicago and first in Kansas City. In addition to the usual subscription concerts are the 10 concerts played in public schools, municipal and industrial concerts. The orchestra was given a grant by the city of Indianapolis of $50,000 for the fourth consecutive year. The previous formal season closed when Mr. Sevitzky led the 12th pair of subscription concerts in Murat Theater on March 30 and 31. Howard Harrington remains orchestra manager.

KANSAS CITY PHILHARMONIC

Two major appointments marked the course of the Kansas City Philharmonic. Efrem Kurtz was signed for two additional years as conductor and M. L. Henderson was appointed business manager following the resignation of Ruth Seufurt. It was estimated that the orchestra's earnings this season will pay 85 per cent of its operating expenses. There will be no deficit this year and next season a backlog of some $20,000 will remain on hand according to the management. Kurtz opened the season on Oct. 15 scheduling 10 pairs of subscription concerts and in addition, free concerts and a popular series. Nine major soloists have been enlisted. Events are given in the Music Hall. The 1945-46 series brought 20 subscription, 6 popular and two Youth programs.

ROCHESTER PHILHARMONIC

The Rochester Philharmonic adhered to a policy of guest conductors in 1945-46, 1946-47, enlisting the aid of Leonard Bernstein, Erich Leinsdorf, Georges Enesco, Vladimir Golschmann and Guy Fraser Harrison. Six soloists were engaged for 1946-47. In March Mr. Bernstein led the orchestra in a New York concert playing Harold Shapero's Serenade in D for strings, which won a $1,000 award, and also Aaron Copland's Danzo Cubano, for the first time in the same city. Twelve subscription concerts are given in the Eastman Theater in Rochester and the orchestra's manager remains Arthur M. See.

NATIONAL SYMPHONY

Shortly after J. P. Hayes was appointed general manager of the National Symphony on May 21 the orchestra began its 10th series of summer Watergate Concerts on June 16. The series ended on July 26, a total attendance of 208,500 having heard the orchestra in the 18-event, six-week season. For 1946-47 the orchestra enlarged its series to 24 weeks, two longer than the previous one. The Sunday series at Constitution Hall was increased from 10 to 12 events and the Wednesday series from 10 to 12. The orchestra also increased its Baltimore visiting programs by one. Launching its 16th season on Oct. 16 with 100 players, on Nov. 27 the ensemble began a new "Hit Parade" series. Hans Kindler is conductor.

BALTIMORE SYMPHONY

The Baltimore Symphony, Reginald Stewart, conductor, celebrated its 30th anniversary on Feb. 6 with a program that included the world premiere of "A Peace Overture" the composition of Gustave Strube, one of the founders of the orchestra. In 1946-47 the orchestra performed, together with the assistance of the musical forces of the Peabody Conservatory, the entire musical output of Johannes Brahms, some 600 works, in commemoration of the 50th anniversary of that composer's death. Its schedule includes 12 mid-week concerts and 8 Sunday night events. C. C. Cappel is manager of the ensemble which plays in the Lyric Theater.

PITTSBURGH SYMPHONY

The Pittsburgh Orchestra's plans for 1946-47 include a six-week tour of the South and Mexico. Under Fritz

Reiner, regular conductor, the orchestra opened its season on Oct. 18 in Syria Mosque in the first concert of 20 pairs of Friday night and Sunday afternoon events. Five popular and several children's concerts are also being given. The orchestra has been increased to a personnel of 80 and eight soloists have been engaged. Edward Specter remains the manager. In 1945-46 the ensemble offered 40 concerts exclusive of popular and Youth programs.

SAN ANTONIO AND NEW ORLEANS

The San Antonio Symphony, Max Reiter, conductor, played 15 concerts in 1945-46 ending its earlier season on March 31. For 1946-47, the management launched a campaign for a $115,000 sustaining fund and enlisted a roster of 12 soloists. On Nov. 9 it began its new series under Mr. Reiter and added a series of five popular concerts to its agenda. The New Orleans Symphony, upon the completion of 1945-46 programs, renewed Massimo Freccia's contract as conductor for two more years. Also scheduled were 16 Tuesday evening concerts, with 11 major soloists.

DALLAS, COLUMBUS, AND HARRISBURG

The Dallas Symphony completed in the Spring its first year under the baton of Antal Dorati and a new management. Twelve subscription programs were given and four Youth programs. Increasing his ensemble to 92, Dorati launched the new season on Nov. 3, planning to offer 14 subscription programs, an increase of two; 8 special concerts, four of these devoted to a Brahms festival, and 15 out-of-town engagements.

In 1946 the Columbus, Ohio, Symphony entered the ranks of professional orchestras with an ensemble of 80 members led by Izler Solomon in 10 subscription, 10 popular, five children's and four out-of-town concerts. Six soloists were engaged for the subscription series. Norman Stuckey was appointed new manager of the orchestra.

The Harrisburg, Pa., Symphony, George King Raudenbush, conductor, began its 17th season on Oct. 8 with a schedule of 7 concerts, similar to that of its 1945-46 season. Mrs. Arthur Hull is president of the Symphony Society and the orchestra plays in the Forum.

OTHER ORCHESTRAS

The Buffalo Philharmonic enlisted as guest conductors in 1945-46, Izler Solomon, Ignace Strasfogel, Jan Wolanek and Victor Alessandro, with William Steinberg as permanent conductor, re-engaging the latter for the 1946-47 season of 10 concerts.

The Seattle Symphony concluded its winter series on Feb. 18-19, playing Carl Bricken's Second Symphony for the first time. With Mr. Bricken conducting, the symphony began its 45th season on Oct. 21 launching 11 pairs of concerts that are to conclude on Feb. 25, with six major soloists appearing. Phil Hart was recently named manager of the orchestra, while Hector Escobosa remains president.

For the fifth year, the Duluth Symphony re-engaged Tauno Hannikainen as conductor for 1946-47, opening its series on Nov. 1 and with a scheduled roster of six soloists.

The Rhode Island Philharmonic, Francis Madeira, conductor, a new group formed in 1945-46 expanded its season for 1946-47, not only in Providence, its home city, but also in other Rhode Island towns which it visits on tour. It has been officially adopted as the Rhode Island State Orchestra.

The Denver Symphony launched its 13th season on Oct. 9 under the baton of its regular conductor, Saul Caston planning to offer approximately 15 concerts in City Auditorium. Helen Black remains manager.

NEW MUSIC

The two most important new scores offered in 1946 were by foreign composers, an Englishman and a Russian: Benjamin Britten with his opera "Peter Grimes," and Shostakovich, with his Ninth Symphony, both works introduced to America by Serge Koussevitzky and the Boston Symphony at the Berkshire Festival. In composition the United States was not a member of the "Big Three," but if we had no monumental scores to show, our composers were not inactive, and in the lesser forms many works, some of them revealing decided talent, were brought to light.

However, two major American works were of signal importance: Samuel Barber's Cello Concerto, again introduced by the Boston Symphony, and at the Columbia University Festival, Gian-Carlo Menotti's opera "The Medium." The former was awarded the coveted testimonial of the New York Critic's Circle and the latter won moderate praise, more as an operatic experiment, than for any intrinsic value in the score. The Philadelphia Orchestra gave the world premiere of Bela Bartok's third Piano Concerto and another Hungarian, Zoltan Kodaly, led the first American performance of his "Peacock Variations" with the same orchestra on Nov. 22.

The New York Philharmonic introduced a quantity of new music, though obviously not much of it was destined to outlast a season. It included (and not necessarily in the foregoing category), Gruenberg's Violin Concerto, Op. 47, first played on April 3; William Grant Still's "Poem" for orchestra, first played on April 4. The Philadelphians offered Louis Gesenway's Concerto for flute on Nov. 1 and the Collegiate Chorale led by Robert Shaw proffered Hindemith's "When Lilacs Last in the Dooryard Bloom'd" in the City Center on May 14. At the Eastman School, a fertile bed of first performances, Weldon Hart's First Symphony, Bernard Rogers' "To the Memory of President Roosevelt," and George McKay's Concerto for cello and orchestra were performed on April 16. In New York City, the National Orchestral Association under Leon Barzin gave the premiere's of Richard Arnell's Violin Concerto, Op. 9 and Stanley Bale's Sinfonietta No. 2, Opus 39. The Boston Symphony played a novelty in New York on Nov. 16, Aaron Copland's Third Symphony. The National Orchestral Association, again under Mr. Barzin, on May 20 introduced "Overture: Jubilation," Adagio and Allegro by Robert Ward; "Fantasy" for violin and orchestra by George Kleinsinger, and a "Requiem" by Lazare Saminsky, in Carnegie Hall. Finally, as a sample of the shape of things to come, a new electronic device called a tone synthesizer, was demonstrated before the American Physical Society in the McMillin Theater at Columbia University. Dr. Harvey Fletcher gave the demonstration which revealed that the device can reproduce every kind of tone, including those of the human voice, as well as all tones familiar to musicians, and millions of others which no known musical instrument can make. The synthesizer was developed at the Bell Telephone Laboratory.

AWARDS

Many important awards were announced in 1946, chief among these were eight Guggenheim fellowships to John Lessard, John Verrall, William Bergsma, Harold Shapero, Alexei Haieff, Henry Brant, Gian-Carlo Menotti and Louise Talma. Samuel Barber was awarded the Testimonial of the New York Music Critic's Circle for his Concerto for Cello and orchestra, and David William Nadien, 20-year-old violinist, received the Leventritt Award, an appearance as soloist with the New York Philharmonic-Symphony under George Szell on Dec. 22 at Carnegie Hall. Max Pressler of Palestine won the $1,000 Debussy award in San Francisco Sept. 7. The Hollywood Bowl Association announced that it would annually give a cash prize of $1,000 to be known as the Gershwin Memorial Award, and Charles L. Wagner, manager of the Wagner Opera Company, offered $1,000 and performance for an original opera based upon an American theme.

THE THEATRE

By Edwin T. Duffy
News Department, *The New York Times*

AMERICAN REPERTORY THEATRE

The first post-war theatre year found New York's theatrical scene engaged in one of the most expansive and, for the most part, highly rewarding seasons of its career. The overall picture of the year's activities discloses several items of paramount importance. One was the creation of the long-awaited American Repertory Theatre with Cheryl Crawford, Margaret Webster, and Eva Le Gallienne serving as its main officers. Although the early selections of the company puzzled some observers, the majority of critics and playgoers realized the necessity for a resident repertory group and saluted the motives behind the organization. Financially, the A.R.T., as it soon became known, was faring satisfactorily, if not brilliantly, at the close of 1946 and its directors already were talking over plans for road company divisions of the repertory theater itself. The acting contingent was headed by Miss Le Gallienne and Miss Webster, and included such notables as Victor Jory, Walter Hampden, Ernest Truex, Richard Waring, and the film actress, June Duprez. The directorial chores were divided between Miss Le Gallienne and Miss Webster with Mr. Jory taking over the reins for the Sean O'Casey one-acter, "Pound on Demand." As for the productions themselves, the group presented Shakespeare's "Henry VIII"; Barrie's "What Every Woman Knows"; Ibsen's "John Gabriel Borkman"; Shaw's "Androcles and the Lion," coupled with the O'Casey one-acter previously recorded.

OLD VIC COMPANY IN NEW YORK

Repertory of a different nature came along during May of 1946 when the Old Vic Company of London was transported to New York for a limited engagement under the aegis of Theatre, Inc. The famous British company was accorded one of the heartiest welcomes in theatrical history. From opening night until the final performance, the Old Vic fared tremendously well. The cast, which was headed by Laurence Olivier, Ralph Richardson, Margaret Leighton and Joyce Redmond, was seen in Shakespeare's "Henry IV, Part I and Part II," Chekhov's "Uncle Vanya," Sophocles' "Oedipus," and Sheridan's "The Critic."

EUGENE O'NEILL

The 1946 theatre year went down in the annals as the one which brought forth Eugene O'Neill's drama "The Iceman Cometh," the first new work from America's number-one dramatist in many years. The play was a symbolical drama whose action took place in a seedy New York saloon in the year 1912. There, a group of derelicts and drunks gather to await the visit of their staunch drinking companion, Hickey, who is about to pay his annual call. Instead of the carousing drinking pal, however, they are shocked to discover a new Hickey who confesses to the murder of his wife and who exhorts them to give up their day-dreams and settle down to reality as the only means of finding their true selves. Woven into the play were many of the author's ideas on life, and, while the play suffered from occasional overwriting and, certainly, overlength, it still represented America's first playwright at his best. With an excellent cast, including James Barton, Dudley Digges, Carl Benton Reid, and Nicholas Joy, "The Iceman Cometh" became New York's top dramatic hit and added to its author's reputation as one of the theatre's most profound dramatists and thinkers.

REVIVALS

General. — The final outstanding trend of 1946 was the theatre's retreat from contemporary new dramas to outstanding successes of the past. Theatrical logicians were not amiss in calling the 1946 year "the year of the great revivals." Including the four productions of the American Repertory Theatre and the five staged by the Old Vic Company, the year's total for revivals came to 19. Not all were successful, to be sure, but the over-all picture indicated that almost any pronounced success of an earlier day faced a fair to extremely good chance of settling down for a comfortable run.

"Playboy of the Western World." —To this observer, the year's most satisfying revival was the one accorded the J. M. Synge Irish Comedy, "The Playboy of the Western World." Carefully produced by Theater, Inc., the oft-told tale of the County Mayo braggart benefited from the gifted direction of Guthrie McClintic and a fine assemblage of actors, including Burgess Meredith in the title role, Mildred Natwick as the amorous Widow Quinn, and Eithne Dunne as Pegeen Mike. Miss Dunne, who was imported from Ireland, where she is acknowledged as one of the first ladies of the Irish stage, brought lyric beauty and deep feeling to the performance and was, certainly, one of the most appealing and talented young actresses to be seen in our theater in many years.

"Cyrano de Bergerac." — Brian Hooker's version of the famous Rostand comedy "Cyrano de Bergerac" was brought to glowing life via the inspired performance of Jose Ferrer in the title role. The new production of the classic was an immediate success and much praise also was bestowed upon the performances of Frances Reid as Roxanne and Paula Laurence as the Duenna.

"Lady Windermere's Fan." — The witty Oscar Wilde comedy "Lady Windermere's Fan" also was beautifully revived and once again this comedy of high class morality stood the test of time. Lavishly designed by Cecil Beaton, the production saw Cornelia Otis Skinner in the pivotal role of Mrs. Erlynne giving one of the best performances of her career and added new laurels to the reputations of such excellent performers as Estelle Winwood, Henry Daniell and Penelope Ward.

Musicals. — Even in the musical field, a revival put in an appearance. That was the resuscitation of "Show Boat," the popular Jerome Kern-Oscar Hammerstein musical based on Edna Ferber's novel of the same name, which proved as popular with a new generation of theater-goers as it did when it was first staged many years ago. Another old-timer to crop up was the George Manker Watters-Arthur Hopkins comedy, "Burlesque." With Bert Lahr and Jean Parker in the roles originally filled by the late Hal Skelly and Barbara Stanwyck, the revival drew fairly solid reviews and prospects for a good run were in sight.

Other Revivals.—For the records, the year also saw Katharine Cornell and Sir Cedric Hardwicke come to town in a limited engagement of Shaw's "Candida"; Andrayev's symbolical melodrama "He Who Gets Slapped" was unsuccessfully revived by The Theatre Guild with Dennis King and Susan Douglas in the leading roles; Shakespeare's "The Winter's Tale" also put in an appearance under The Theatre Guild banner with Jessie Royce Landis, Florence Reed, and Henry Daniell heading the cast; the riotous Ben Hecht-Charles MacArthur comedy "The Front Page" received an excellent revival with a fine cast headed by Lew Parker, Arnold Moss and Cora Witherspoon but somehow failed to win strength at the box-office, and an all-Negro company headed by Ferdi Washington and Rex Ingram who proved unable to save Gilbert Seldes' version of the Aristophanes comedy, "Lysistrata."

DRAMAS

"Christopher Blake."—In addition to the Eugene O'Neill drama "The Iceman Cometh," 1946 saw seven important new dramas presented to New York's playgoing public. Of the lot, Moss Hart's "Christopher Blake" was a touching and deeply moving story of the travail of a 12-year-old youth caught in the snares of domestic tragedy. A bitter indictment against the effects of divorce on young children, "Christopher Blake" saw the emergence of young Richard Tyler as Broadway's newest star. In the highly demanding title role, young Tyler gave a brilliant account of himself and was, undoubtedly, Broadway's favorite young player by the end of the year. Word must be mentioned, too, of the intelligent acting of Shepperd Strudwick as the boy's father, and Martha Sleeper who, in the more complex role of the mother, gave the most sensitive and inspired acting of her career.

"Joan of Lorraine."—Ingrid Bergman, the Swedish-American screen star, returned to the stage in the new Maxwell Anderson drama, "Joan of Lorraine." Revolving about the story of a group of actors preparing to produce the play "Saint Joan," Anderson's latest work drew a parallel between the life of the saint and the modern-day world. Using a bare stage as a novelty, the play, thanks to the drawing power of the star, whose presence had sold out the house months in advance, was one of the most heavily sought after attractions of 1946.

"Another Part of the Forest."—Lillian Hellman was represented by a new drama, "Another Part of the Forest," a deplorably uneven story in which the authoress, apparently, was unable to determine whether she was striving for drama or melodrama. A fine cast headed by Mildred Dunnock, Patricia Neal, and Percy Waram were largely responsible for deluding the majority of the patrons into thinking they were seeing profound dramaturgy at work. That they were seeing nothing more than some fairly ordinary ten-twenty-thirty melodramatics seemingly has not impressed them, as the drama is continuing, at the time of this writing, to large audiences.

"Antigone." — Katharine Cornell and Gilbert Miller were responsible for "Antigone," adapted by Lewis Galantière from the French of Jean Anouilh which, in turn, was adapted from the Sophocles tragedy. With its actors garbed in evening dress, this new version of "Antigone" was striking, effective theatre. Miss Cornell, as the tragic heroine, gave one of her most moving performances, although she was actually overshadowed by the masterly playing of Sir Cedric Hardwicke in the more expertly written role of the tyrant, Creon.

"The Magnificent Yankee." — Louis Calhern and Dorothy Gish undertook the roles of Supreme Court Justice Holmes and his wife in Emmett Lavery's sentimental biographical drama, "The Magnificent Yankee." Despite the dramatist's apparent inability to build strong dramatic moments, the play benefited from the superior acting of the stars and proved popular for all of six months.

"On Whitman Avenue."—Maxine Wood's "On Whitman Avenue" came hard on the heels of last season's best problem play, "Deep Are the Roots." Although the new drama lacked the tenseness of the earlier vehicle, it was not wholly without merit, for Miss Wood tackled the Negro-White problem head on. While she did not come up with a world-shaking play, she did manage to put together some effective scenes. The production, headed by Canada Lee, Ernestine Barrier, and Will Geer, foiled its enemies by achieving a run of several months before it was forced to close.

PROBLEM DRAMAS AND OTHERS

Four other problem plays arrived during the year, the best of the lot being the topical drama "Temper the Wind" by Edward Mabley and Leonard Mins. With Blanche Yurka giving an able performance in the leading role, the drama received strongly divided notices. The play, which dealt with the Allied occupation of Germany, was the last legitimate production of the year and, at last report, was expected to make a fight for survival. As for the others, Don Appell's "This, Too, Shall Pass" concerned itself with the Jewish question; Robert Ardrey's "Jeb" and Abram Hill's "Walk Hard" both took up the cudgels in defense of the Negroes.

The year's remaining dramas were disappointing. They included Maxwell Anderson's "Truckline Cafe," which drew notices so bad that the producers took space in the local newspapers to heave one back at the critics; "Flamingo Road," from the pens of Robert and Sally Wilder; "Obsession," by Jane Hinton, which served as a *tour de force* for Eugenie Leontovich and Basil Rathbone who comprised the entire cast; "Hear That Trumpet!," a short-lived offering from Orrin Jannings; Thomas Job's "Land's End," a dreary adaptation of the novel *Dawn in Lyonesse,* with Shirley Booth, Minnie Dupree, and Helen Craig; "No Exit," a French drama by Jean-Paul Sartre adapted by Paul Bowles and featuring screen personalities Ruth Ford and Annabella and introducing the Parisian actor, Claude Dauphin; and "The Duchess of Malfi," an adaptation of the Elizabethan drama by John Webster containing a fine performance from its star, Elisabeth Bergner.

COMEDIES

General.—At the end of 1946, the score-card for comedy attractions read six hits and 13 failures, hardly a notable record. To look at the more pleasant side of the picture, all of the six comedies which fared well with the press were pleasant. There will be little contesting the fact that Garson Kanin's "Born Yesterday" was the most enjoyable comedy of the season. A spry and deftly written satire on Washington politics, the piece bore some resemblance to last year's "State of the Union" although, actually, "Yesterday" was a better play. The vehicle served as a springboard on which two bright new talents, those of Judy Holliday and Paul Douglas, were launched. Miss Holliday, as the Dumb Dora given a Pygmalion treatment, and Mr. Douglas as the millionaire junkman, contributed performances of high comedic ability.

"Years Ago."—Ruth Gordon who is, incidentally, Mrs. Garson Kanin offstage, was absent from the theatre again this year in an acting capacity, but compromised by submitting her pleasant comedy about her early life called "Years Ago." Mr. Kanin attended to the staging, which embraced a cast including Patricia Kirkland as the young Ruth Gordon, and Florence Eldridge and Fredric March as Ruth's parents.

"Happy Birthday" and Others.—The other four successful comedies were vehicles, deliberately constructed for a definite star. Thus, Anita Loos' "Happy Birthday" snared the services of Helen Hayes to lend luster to what was, basically, a rather thin comedy. Clifton Webb contributed no end of charm to the leading role of Noel Coward's minor romp "Present Laughter." Alfred Lunt and Lynn Fontanne gave a pair of sparkling performances in the Terence Rattigan comedy "O Mistress Mine!," while Ina Claire made a most welcome return to the footlights as the heroine of George Kelly's bright comedy "The Fatal Weakness."

COMEDY FAILURES AND NEAR-FAILURES

Walter Houston made one of his rare stage appearances in "Apple of His Eye," a dreary comedy by Kenyon Nicholson and Charles Robinson, but not even the ingratiating performance of that able actor could prevent the play from its preordained trip to the storehouse. The wonderful Bobby Clark, for a few weeks at least, made merry with his free adaptation of Molière's comedy "The Would-Be Gentleman"; Harry Segal's comedy "Wonderful Journey," familiar to film-goers as "Here Comes Mr. Jordan," was put on for a few performances but failed to make the grade, and that fabulous road turkey "Maid in the Ozarks," from the pen of one Claire Parrish, bobbed up in

New York in the midst of the summer heat to find both press and public strangely chilled.

The year's other comedies, none of which managed to stay around very long, were Vincent McConnor's "A Joy Forever," with which Guy Kibbee was lured back to the stage; William Roos' adaptation of the novel *January Thaw* by Bellamy Partridge; A. B. Shriffrin's "I Like It Here," featuring the Continental comedian, Oscar Karlweis; Bella and Samuel Spewack's "Woman Bites Dog," containing the acting services of Ann Shoemaker and Taylor Holmes; N. Richard Nash's supposed satire on Shakespeare called "Second Best Bed," which gave Ruth Chatterton the worst role of her career; Frederick Kohner's and Albert Mannheimer's rubbish known as "The Bees and the Flowers"; "Loco" by Dale Eunson and Katharine Albert which introduced Jean Parker of the film industry to a Broadway audience; and Henry R. Misrock's "A Family Affair" with John Williams and Ann Mason. A late entry was "Lovely Me" by Jacqueline Susan and Beatrice Cole, which secured the talents of Luba Malina, whose perspicacity had kept the operetta "Marinka" running for several months last season. "Lovely Me" was still on the boards at the end of the year.

MUSICALS

"Annie Get Your Gun."—As compared to other seasons, there was relatively little activity in the musical field and, with few exceptions, the offerings were far from distinguished. Of the three best musicals of the year, only the Irving Berlin-Herbert and Dorothy Fields show, "Annie Get Your Gun" proved to be permanently popular. In fact, this turned out to be the year's top new musical, and in it Ethel Merman took the town by storm. "Annie," at the time of this writing, still is playing to capacity houses at every performance.

"Lute Song," a love story with music, was the most beautiful theatrical production seen in many years. Designed by Robert Edmond Jones and lavishly produced by Michael Myerberg, "Lute Song" somehow failed to capture a Broadway public satiated with musicals which made little or no demand upon their imagination. The play was kept running for several months only because of the courage of its sponsor and with the expected financial loss. Both Mary Martin and Dolly Haas, who played the starring role at different times during the engagement, were outstanding.

"Around the World."—The Mercury Theatre and Orson Welles contributed "Around the World," one of the most amusing extravaganzas to come along in some time. Based fleetingly on the Jules Verne novel, *Around the World in 80 Days,* the production boasted everything from a Chinese circus to a slide-for-life and, of course, that well-known kitchen sink. The notices for the spectacle were mixed, and, despite an attempt to push it along, the show was forced to close after a short run. Welles, in a variety of disguises, and the suavely amusing Arthur Margetson, helped make this particular theatrical trip around the world most enjoyable.

"Park Avenue."—In line with Margetson, however, it should be noted that he doesn't have to wait long "between engagements." A few months after the Welles' fiasco, he found himself working in the latest George Kaufman-Nunnally Johnson offering, "Park Avenue." While the musical found Kaufman in somewhat better form, it still lacked importance. A satire on the foibles of the Park Avenue divorce set, the vehicle was almost totally without sustained humor, and the music Arthur Schwartz supplied for the occasion was hardly up to his best. Mr. Margetson, however, and a personable supporting cast headed by Leonora Corbett, Marthe Errolle, and Ray MacDonald managed to keep the attraction going for a time, but the closing notice was up before the year was out.

"Beggar's Holiday," a musical-comedy based on "The Beggar's Opera," opened toward the close of the year to mixed notices, and its fate was somewhat uncertain as this volume went to press. A large and able cast headed by Alfred Drake of "Oklahoma!" fame, and Zero Mostel, was primarily concerned in the goings-on.

"St. Louis Woman" was a handsomely mounted item featuring a lively all-Negro company headed by Rex Ingram, the Nicholas Brothers, and the lovely Ruby Hill. Rouben Mamoulian, who had piloted both "Oklahoma!" and "Carousel" into public favor, seemed unable to keep this attraction on the move, despite hard work on the part of the cast. The play was kept running at a loss for a few months until the summer heat arrived and spelled "finis."

"If the Shoe Fits."—Of the instant musical failures, only one, "If the Shoe Fits," had anything to recommend it. In that offering, the British comedienne, Florence Desmond, cavorted and pranced and created impressions of stage and screen stars that were among the funniest ever seen on a Broadway stage.

"Nellie Bly" boasted the services of the celebrated comic team of William Gaxton and Victor Moore, while "The Duchess Misbehaves" had as its featured performer the Audrey Christie remembered for her vitriolic acting a year or two back in "The Voice of the Turtle." Both, however, failed rapidly. The last musical entry for the year was "Toplitzky of Notre Dame," which took up somewhat doubtful residence as 1946 drew to its close.

REVUES

"Call Me Mister."—The most successful revue for 1946 was the ex-G.I. offering, "Call Me Mister." Although the attraction was not without its good points, this observer could not but notice that both press and public, alike, leaned over backwards to shower praise upon material which, at best, could be termed only mildly amusing. The most entertaining members of the cast turned out to be Betty Garrett, featured singer and comedienne, and the Negro tenor, Laurence Winters. The show, as intimated, caught on with the public and still is high on the list of Broadway's favored attractions.

"Three To Make Ready."—Regardless of its defects, the revue known as "Three To Make Ready," was more professional in both style and tone. While neither its sketches nor its music was exactly on the memorable side, Ray Bolger, with the support of the amusing Brenda Forbes, kept the vehicle running for almost a year. Although scheduled to wind up its run early in 1947, "Three To Make Ready" was forced to close earlier than planned owing to the illness of its star.

OPERETTAS

Operetta fanciers experienced bad luck during 1946. All that the theatre could offer was a musty item called "Yours Is My Heart," sponsored by Arthur Spitz, and Edwin Lester's presentation of "Gypsy Lady."

Of the two, "Yours Is My Heart" was the better, owing to the presence in its cast of the noted Austrian tenor, Richard Tauber, and the former Metropolitan Opera soprano, Stella Andreva. Tied to the production, however, was a dreadful story about a Chinese prince who falls in love with a Parisian singer, and tied to that was a comedian who made one long for the reopening of New York's burlesque houses, at which only that particular brand of comedy would be tolerated. Tauber, however, who was making his American legitimate theatre debut, was in good voice, and his singing of the title song in a variety of languages was most pleasing, as was the true soprano voice of the talented Miss Andreva. Whatever chances "Yours Is My Heart" may have had to remain on the scene disappeared when Tauber came down with laryngitis and was forced out of the play.

"Gypsy Lady" was a garbled rehash of two Victor Herbert operettas, "The Fortune Teller" and "The Serenade," containing pleasant enough music from both shows. There, however, the good things came to an end, and the featured comedian and the bookwriters once more got to work. After a brief spurt at the box-office, attendance dwindled, and "Gypsy Lady's" management decided to take the affair over to London, possibly under the assumption that that city's dramatic critics are more gullible than those of New York's.

MELODRAMAS

The best the theatre could produce for the blood-and-thunder addicts was a mild, but not entirely hopeless, melodrama from Ben Hecht and Charles MacArthur called "Swan Song." While the play's direction left much to be desired in the manner of tempo and timing, the play managed to attract enough patrons to keep it running, even at a loss, for the summer season. The acting company, headed by 13-year-old pianist Jacqueline Horner, Mary Servoss, and Scott McKay was uniformly good.

Percy Kilbride, a pleasant character actor, found himself enmeshed in the "heavy" role of Marie Baumer's "Little Brown Jug." Entirely miscast, Kilbride worked to generate a few thrills, but both script and director were against him. He was supported by Katharine Alexander, in her first stage role in several years, Marjorie Lord from the cinema, and that busy-man-about-the-playhouses, Arthur Margetson.

There were three other attempts at melodrama during the season. "The Dancer," by Milton Lewis and Julian Funt, tried to draw a parallel between the life of Nijinsky and the story of a mad ballet dancer. Another batch of melodramatic twaddle was hurled at the heads of New York's first-nighters in Agatha Christie's "Hidden Horizon," which was hidden permanently from view after 13 showings. Dennis Hoey contributed "The Haven," a penny-dreadful which disappeared after five performances flat.

MISCELLANEOUS

Shortly before the summer doldrums set in, Sonja Henie and Arthur M. Wirtz hit upon the brilliant idea of installing another ice show at their Center Theater. Although they called it "Icetime," there was so little difference between the present exhibit and its three predecessors, that it was impossible to tell where one left off and the other began. The latest exercise in iced monotony proved, as usual, a potent lure with the summer crowds and still is turning over a nice profit, all of which should make the producers most comfortable.

Ben Hecht, whose season had already been active, what with the revival of "The Front Page" and the engagement for "Swan Song," next sent along a frank and unashamed propaganda pageant labeled "A Flag Is Born." Sponsored by The American League for a Free Palestine and with a cast headed by Paul Muni and Quentin Reynolds, the attraction proved popular with a large section of the public, and though intended originally as an 8-week affair, did not ring down its final curtain until almost three months later than planned.

The year's only fantasy was a well-meaning item called "Mr. Peebles and Mr. Hooker" by Edward E. Paramore, Jr. Despite good intentions, this old-wives' story of the age-old battle between God and the Devil never had a chance, despite the acting performances of Howard Smith and Rhys Williams, who appeared in the title roles.

CITY CENTER PRODUCTIONS

New York's cut-rate citadel of culture saw only two productions on its stage for 1946. Early in the year, a limited revival of the operetta "The Desert Song" was produced with a company including Jack Goode, Dorothy Sandlin, and Lester Matthews, while in April the still-popular and, incidentally, still-excellent Billy Rose presentation of "Carmen Jones" came back to the Center for a few weeks. For the greater part of the season, the house was given over to showings of the British film version of Shakespeare's "Henry V" starring Laurence Olivier. The theatre's plans for 1947 call for a return engagement of John C. Wilson's musical success of a season or two back, "Bloomer Girl."

MOTION PICTURES

By Thomas M. Pryor
Motion Picture Department, *The New York Times*

LABOR PROBLEMS

Labor problems took top billing in Hollywood during 1946 and artistic endeavor fell off perceptibly while rival labor unions fought a finish fight and management stood more or less on the sidelines, though not entirely in the role of the innocent, aggrieved victim. For while the strike of studio carpenters, prop men, set designers, and other craft workers grew out of a jurisdictional battle between the Conference of Studio Unions and the International Alliance of Theatrical Stage Employes (both, incidentally, belong to the American Federation of Labor), the studios elected to go along with the more powerful IATSE. Aside from whatever political considerations this decision reflected (the Hollywood air was fouled by charges that Moscow agents were behind the CSU), the producers' strategy followed sound business reasoning. By averting a rupture in relations with the IATSE, the studios prevented the strike issues from attaining calamitous proportions, for the IATSE, which also controls the projectionists in movie houses throughout the country, could cut off Hollywood's source of income overnight by calling out the "booth" men, thus forcing theatres to close.

As the year ended there was no indication that the issues which precipitated the strike—it began in September—were close to settlement. Studios were operating, though not with customary smoothness, with the aid of strike-breakers provided by the IATSE. Violence was more pronounced during this strike than on previous occasions. Battles frequently broke out between pickets and the consolidated forces of the local municipal and studio police, and homes of non-striking union members were bombed on at least two occasions.

STRIKE ISSUES

The strike was actually a continuation of the conflict between the unions for control of set work, which began in 1945 and resulted then in an eight months' strike. In December, 1945, an AFL arbitration award sought to divide set work between IATSE members and carpenters of the CSU. This resulted in a truce which lasted until the following September when the CSU members refused to work on sets built by the IATSE. The CSU men then were discharged by the studios. In November the strike issues were further aggravated by the CSU's demand for a 20 per cent wage increase.

That the strike was costly to the industry was freely admitted by studio executives, though no responsible source would estimate the over-all amount of the loss. The producers who were caught with uncompleted pictures filmed in Technicolor were, however, the hardest hit, when the technicians at the Technicolor plant, staged a surprise strike in October in defiance of their parent union. The laboratory technicians, numbering approximately 1,500, comprise IATSE Local 683. As a result of this action, David O. Selznick could not release his $5,000,000 production, "Duel in the Sun," for the Christmas holiday season as scheduled. Several other expensive productions also were held up.

PRODUCTION INCREASE

However, it is interesting to note that the combined output of the studios during 1946 totaled 405 films, or an increase of eight per cent over

1945. Many of the pictures released had been made as long ago as two years, but had been held on studio shelves due to the longer runs theatres have been giving pictures since 1943.

ARTISTIC QUALITY

In this respect, it is difficult to compare the quality of the pictures made during 1946 with that of the preceding year or two when studios still were operating under wartime conditions. Yet, for critical purposes, one has the right to form a judgment on the basis of the quality of pictures exhibited during a given year, regardless of the time and circumstances of their actual filming.

Perhaps the most striking commentary is to be found in a study of the Ten Best picture selections of newspaper critics and reviewing groups all over the country. The weekly *Variety,* long regarded as the foremost trade publication in the entertainment world, reported that a survey showed a "preponderance of foreign films on the annual 'Ten Best' lists." *The New York Times,* for instance had only five Hollywood productions on its ten-best list. The National Board of Review of Motion Pictures placed four foreign-made pictures at the top of its ten-best selections. All of which should be taken by Hollywood as definite indication that its product for the year was hardly as good as it could, or should, have been.

BRITISH COMPETITION

The strongest competition came from the studios of England. British pictures reached Broadway theatres with greater regularity than heretofore, and the good ones found appreciative audiences. Around the country, they were more widely exhibited than ever before. "Henry V," the London-made picturization of the Shakespearean drama, was acclaimed by the National Board as the outstanding screen accomplishment of the year. Significant, too, is that, of the three pictures from which the New York Film Critics made their choice of the year's best, two came from English studios, "Henry V" and "Stairway to Heaven," which in London was titled "A Matter of Life and Death." Had not Samuel Goldwyn come to the rescue of the American industry late in the season with his splendid topical drama, "The Best Years of Our Lives," the Critics' award would have gone to "Henry V." It lost out only by a vote of 6 to 12 in favor of the Goldwyn contribution.

Only the film trade publications, which depend entirely on movie company advertising for their existence, had comforting words for the studio overlords, assuring them that the newspaper critics were anti-Hollywood and didn't know what they were talking about anyway, but Samuel Goldwyn, who most certainly isn't anti-Hollywood, felt the need to caution his colleagues against their intellectual isolationism in a blistering, public pronouncement. Hailing the competition from Britain as a healthy development, Mr. Goldwyn said it "may provide the threat that Hollywood needs to stir itself out of its fat-cat complacency." Commenting on the generally poor quality of pictures, the producer declared "Hollywood has run dry of ideas. It is living on borrowed time—and borrowed ideas from the past—and that is why, with few exceptions, every picture reminds you of a hundred other pictures." Mr. Goldwyn put his finger on the most glaring deficiency of our movies with those last few thoughts.

THE TEN BEST

Now, in the light of this background, it seems appropriate to consider the Ten Best pictures as selected by Bosley Crowther, motion picture critic for *The New York Times.* The pictures, listed according to the order in which they opened at Broadway theatres, follow:

"Open City," written by Sergio Amidel and F. Fellini; directed by Roberto Rosselini and produced in Italy by Excelsa Films. This grim and electrifying drama of underground resistance to the Nazis in Italy was the most intense and disturbing picture of the year. Crudely produced, it had, however, a rare quality of artistry which derived from the fervor of its makers and from profound performances by Aldo Fabrizi, Anna Maganani, Marcello Pagliero, and many others.

"Road to Utopia," written by Norman Panama and Melvin Frank; directed by Hal Walker and produced by Paul Jones for Paramount. Fine and finished clowning of a swift and expansive sort is always welcome on the screen—and that is what this antic had. A titantic burlesque on brawny adventure pictures, it was in the classic style and was riotously played by those old partners, Bing Crosby, Bob Hope, and Dorothy Lamour.

"The Green Years," written by Robert Ardrey and Sonya Levien from the novel by A. J. Cronin; directed by Victor Saville and produced by Leon Gordon for Metro-Goldwyn-Mayer. A wealth of colorful incident tastefully presented, and performances nicely tuned to the humor and sentiment of human nature, made this visualization of a Scottish family story one of the year's best films. Charles Coburn, Tom Drake, Dean Stockwell, and Hume Cronyn were excellent in the cast.

"Henry V," written by William Shakespeare and edited by Laurence Olivier and Reginald Beck; directed and produced in Britain by Mr. Olivier for Two Cities Films. For the first time, in this brilliant picture, a play by Shakespeare was brought to the screen with all the color and sweep of a spectacle, the subtlety of character and the poetic eloquence inherent in the works of the Bard. Mr. Olivier's robust performance in the title role was finely supported by Robert Newton, Leslie Banks, Renee Asherson, and Frances Lister, among others.

"Notorious," written by Ben Hecht; directed and produced by Alfred Hitchcock for David O. Selznick and RKO-Radio. Although a basically conventional spy story, this romantic melodrama became a highly suspenseful and consistently fascinating screen entertainment through expert writing, direction, editing, and finished performances by Ingrid Bergman, Claude Rains, Cary Grant, Leopoldine Konstantin, and Louis Calhern.

"Brief Encounter," written by Noel Coward; directed by David Lean and produced by Mr. Coward in England. A fine talent for simple dramatic expression, both visual and verbal, was displayed in this affecting film about a clandestine and unfulfilled romance between an English housewife and a small-town medico. Celia Johnson and Trevor Howard revealed uncommon naturalness and sensitivity in the principal roles.

"The Well-Digger's Daughter," written, directed and produced in France by Marcel Pagnol. Despite the language barrier, this five-year-old French film, only this year released in this country, gave off a delicious glow of nimble wit and a shrewd understanding of human nature in its story of a peasant of Provence who comes to love his illegitimate grandchild. The old man was superbly played by the late Raimu, while Fernandel, Josette Day, and Charpin were winning in other roles.

"The Best Years of Our Lives," written by Robert E. Sherwood from a story by MacKinlay Kantor; directed by William Wyler and produced by Samuel Goldwyn for RKO-Radio. This multi-character comedy-drama of homecoming war veterans, their families and friends was, in its composition, its perceptive direction, and its performance throughout, the best all-around film of the year from Hollywood. Fredric March, Dana Andrews, Teresa Wright, and a young man named Harold Russell shone in the cast.

"My Darling Clementine," written by Samuel G. Engel and Winston Miller from a story by Stuart N. Lake; directed by John Ford for Twentieth Century-Fox. The inexhaustible potentialities of the Western film genre—the vivid action, the picturesqueness of character, and the pictorial magnificence of locale—were eminently realized in this fluid rendition of the standard frontier-marshal theme. Henry Fonda, Victor Mature, and Walter Brennan carried the acting honors.

"Stairway to Heaven," written, directed and produced in England by Michael Powell and Emeric Pressburger for J. Arthur Rank. For its qualities of imaginative conception and cinematic inventiveness, this delightful romantic fantasy about a flier, who has hallucinations of the Beyond, deserves the highest recommendation of any film of the year. Sensitive and mature performances by David Niven, Roger Livesey, Kim Hunter, and Raymond Massey enhance its incomparable charm.

BOOM PROFITS

While doleful reports on the quality of American pictures were being written at the year end, the producing companies were, strangely enough, adding up phenomenal profits. The *Variety* statisticians were predicting, on the basis of earning statements of the major studios, record net profits of $120,000,000 for the eight major companies above. Part of this can be attributed to a slight increase in basic theatre admission prices throughout most of the country. Perhaps an even more influential factor is to be found in the practice, which reached new heights during the year, whereby theatres jockeyed price scales according to the demand for tickets. This was especially noticeable at the big first-run theatres, particularly in New York, where matinee admissions frequently exceeded $1 and evening prices reached as high as $2.40, even at houses which had no supplementary stage attractions. Public grumbling over these conditions was pronounced, yet not enough persons remained away from movies to make the protest effective.

PRODUCTION COSTS

When confronted with charges that admission prices were excessive, producers countered with the claim that production costs alone had risen approximately 25 per cent over the previous year, and, on top of this, they argued that distribution expenditures also increased by an additional 25 per cent, making an over-all rise in costs of 50 per cent.

The higher picture grosses were attributed mostly to increased attendance. The industry blithely set the attendance figure for the United States at approximately 90,000,000 weekly. Yet more conservative estimates claimed that about 70,000,000 would be more accurate. In any event, no one could explain quite satisfactorily how the staggering profits were possible in view of reports that box-office receipts had slumped about 20 per cent in the closing months of the year.

INDEPENDENT PRODUCTION

Industrywise, one of the more significant developments was the steady growth of independent production during 1946. Roughly 50 such new companies were announced either by stars, directors, writers, or producers who decided to break away from the majors. Moreover, profit-sharing deals with acting, writing, directing, and producing talent were entered into by every major studio, with the exception of Metro-Goldwyn-Mayer. It is estimated that about 25 per cent of Hollywood's 1946 pictures were made independently, and indications are that there will be no appreciable slackening of this trend—at least not for the first six months of 1947. However, the decline in box-office revenues, coupled with the still rising cost of production, is expected to cause investors to tighten their purse strings. In fact, the major companies wound up the year by starting to pare expenses. Metro-Goldwyn-Mayer reportedly was looking to lop $6,000,000 from its 1947 budget.

CONSENT DECREE

Moreover, the final consent decree, handed down on Dec. 31 by the three-judge Federal statutory court in New York, presages wide changes in the industry's picture selling methods during 1947. The decision in the eight-year-old anti-trust suit filed by the Department of Justice against the eight principal producing and distributing companies was written by

United States District Judges John Bright and Henry W. Goddard and Judge Augustus N. Hand of the Circuit Court of Appeals.

Highlights of the decree are that it enjoins the defendants from various trade practices, including fixing of minimum admission price agreements; prohibits preferential treatment of exhibitors and provides that any exhibitor may demand competitive bidding for pictures (the distributors may reject all bids, but in event an award is made the picture must go to the highest bidder); and compels distributors to divest themselves of theatre interests in which their holdings are more than five per cent but less than 95 per cent. The court allows two years for compliance with this provision of the order.

The court stayed operation of the judgment for 60 days, or until March 1, 1947. In the event an appeal is made, which appeared certain at this writing, another 30-day period would be granted "to enable any appellant to move before the Supreme Court for a stay in respect to any portion of the judgment from which an appeal has been taken."

CORPORATE CHANGES

The most important corporate change involved the merger of Universal Pictures and International Pictures, the latter an independent company headed by William Goetz and Leo Spitz, to form Universal-International. As part of the new set up, the J. Arthur Rank Organization of England became more closely aligned with Universal-International. Rank has long been a large stockholder in the parent company, Universal Pictures, Inc.

The only other major development was the establishment by David O. Selznick of his own producing and distributing organization, The Selznick Releasing Organization. This followed Selznick's break, late in the year, with his owner-partners in the United Artists Corporation, Mary Pickford and Charles Chaplin. In taking his product away from United Artists and forming his own company, Selznick declared that the move would not affect his one-third ownership in United Artists. The company indicated that it would take Mr. Selznick into court to determine whether his action constituted a breach of contract.

DEVELOPMENT OF 8MM AND 16MM PICTURES

Universal, also in association with the Rank interests, formed a separate corporation, United World Films, to produce and distribute 8mm and 16mm pictures of an educational, religious, and entertainment nature for both the home film and the non-theatrical film markets. As a first step, United World purchased the Filmosound Library, containing 6,000 subjects, from Bell & Howell, and, later, it purchased control of Castle Films, the largest producing-distributing company servicing home picture enthusiasts.

It is estimated that there are close to 400,000 8mm and 16mm silent and sound movie projectors now in operation in this country, owned either by individuals or groups, and that the audience for these pictures is well over 20,000,000 a year. The demand for these sub-standard size projectors has not yet reached the saturation point, and it is expected that within five years there will be at least 2,000,000 such projectors in use in this country alone. All of which indicates the emergence of another sizeable movie industry apart from Hollywood.

NEW TALENT

In the new talent department, Hollywood drew heavily during 1946 on established English players. Among those brought to this country were Rex Harrison, who made a big hit in Twentieth Century-Fox's "Anna and the King of Siam," Ann Todd, Phyllis Calvert, Peggy Cummings, Lilli Palmer (Mrs. Rex Harrison), Patricia Roc, and Pat Kirkland, among others. Also imported was the Swedish actress, Viveca Lindfors.

Among new or comparatively new

players introduced by Hollywood and who showed considerable promise were Larry Parks in "The Jolson Story," Celeste Holm in "Three Little Girls in Blue," Jeanne Crain in "Margie," John Lund in "To Each His Own," and Burt Lancaster in "The Killers." Also there were Nancy Guild, Douglas Dick, Dorothy Patrick, Richard Hart, Cathy Downs, Barbara Bel Geddes, Conrad Janis, and the child actress Sharyn Moffett.

FOREIGN REPORT

There was both good and bad news for the American industry abroad during 1946. On the credit side was the negotiation of a new trade agreement with France and also a beneficial tax treaty with that country; the lifting of the double tax in Great Britain, and, as the result of this country's loan to England, there was assurance that remittances on earnings in England would continue to flow into the coffers of Hollywood companies. After a year-long tug-o'-war with the Dutch film monopoly, the Bioscop Bond, the Motion Picture Export Association, negotiated a settlement. Now Hollywood pictures are once more doing business in The Netherlands. In eastern Europe, however, state film monopolies continued in force, largely as a result of Russian influence.

Hollywood was particularly disturbed at the continuation through 1946 of what it choose to term an anti-American campaign on the part of the British press and radio. This feeling stemmed from the fact that British criticism of films stiffened considerably, and, moreover, box-office figures indicated plainly that the popularity of American pictures was not what it used to be. In several instances, British-made pictures, which compared favorably with their opposite Hollywood types, showed far greater earning power than did the imported product. Hollywood, following its own peculiar logic, naturally concluded that the British press had succeeded in prejudicing His Majesty's subjects against American pictures.

Thus, Hollywood went into 1947 with some grave misgivings about how its product would fare in Great Britain, its biggest foreign market by far during the year.

PERIODICAL PUBLICATIONS

American Cinematographer
1782 North Orange Drive, Hollywood, Calif.

American Home, The
444 Madison Ave., New York City.

American Journal of Archaeology
Archaeological Institute of America, Columbia University, New York City.

Antiques Magazine
40 East 49th Street, New York City.

Architectural Forum
350 Fifth Ave., New York City.

Architectural Record
119 W. 44th St., New York City.

Art Digest, Inc.
116 East 59th Street, New York City.

Art News
136 East 57th Street, New York City.

Billboard, The
1564 Broadway, New York City.

Design
243 N. High St., Columbus, O.

Etude
1712 Chestnut Street, Philadelphia.

House and Garden
420 Lexington Ave., New York City.

Modern Music
130 W. 56th Street, New York City.

Motion Picture Herald
Rockefeller Center, New York City.

Museum News
Smithsonian Institution, Washington, D. C.

Musical Courier
119 West 57th Street, New York City.

Musical Digest
119 West 57th Street, New York City.

Musician, The
139 E. 47th Street, New York City.
Octagon, The
New York Ave., Washington, D. C.
Parnassus
625 Madison Ave., New York City.
Theatre Arts Monthly
130 W. 56th St., New York City.
Variety
154 West 46th Street, New York City.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

Academy of Motion Picture Arts and Sciences, Taft Bldg., Hollywood, Calif.

American Academy of Arts and Letters, 633 W. 155th St., New York City.

American Academy of Arts and Sciences, 28 Newbury St., Boston.

American Academy in Rome, 101 Park Ave., New York City.

American Ceramic Society, 2525 N. High St., Columbus, Ohio.

American Federation of Arts, The, Barr Bldg., Farragut Sq., Washington, D. C.

American Fine Arts Society, 215 W. 57th St., New York City.

American Institute of Architects, 115 E. 40th St., New York City.

American Numismatic Society, 156th St. and Broadway, New York City.

American Scenic and Historic Preservation Society, 287 Convent Ave., New York City.

Archaeological Institute of America, Columbia University, New York City.

Architectural League of New York, 115 E. 40th St., New York City.

Artists Guild, 551 Fifth Ave., New York City.

Fine Arts Federation of New York, 115 E. 40th St., New York City.

Graphic Arts Board of Trade, 136 Liberty St., New York City.

Hispanic Society of America, The, 155th St., West of Broadway, New York City.

Municipal Art Society of New York, 119 E. 19th St., New York City.

National Academy of Design, 1083 Fifth Ave., New York City.

National Alliance of Art & Industry, 119 E. 19th St., New York City.

National Assn. of Women Artists, 42 W. 57th St., New York City.

National Institute of Arts and Letters, 633 W. 155th St., New York City.

National Sculpture Society, 115 E. 40th St., New York City.

New York Society of Architects, 101 Park Ave., New York City.

Society for American Archaeology, Illinois State Museum, Springfield, Ill.

Society of Illustrators, Inc., 128 E. 63rd St., New York City.

DRAMA

Actors Equity Assn., 45 W. 47th St., New York City.

Actors Fund of America, 1619 Broadway, New York City.

Dramatists' Guild, 6 East 39th St., New York City.

English Folk Dance and Song Society of America, 15 E. 40th St., New York City.

Episcopal Actors Guild, 1 E. 29th St., New York City.

Independent Theatre Owners Assn., Hotel Astor, New York City.

International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators of the United States and Canada, 630 Fifth Ave., New York City.

International Theatrical Play Bureau, RCA Bldg., New York City.

League of New York Theatres, 234 W. 44th St., New York City.

Motion Picture Producers and Distributors of America, Inc., 28 W. 44th St., New York City.

Motion Picture Producers Assn., Hollywood, Calif.

Motion Picture Theatre Owners of America, 1600 Broadway, New York City.

Museum of the City of New York, Theatre Div., Fifth Ave. and 104th St., New York City.

New York Public Library, Theatre Div., Fifth Ave. and 42nd St., New York City.

Screen Actors Guild, 7046 Hollywood Boulevard, Hollywood, Calif.

Theatre Authority, Inc., 545 Fifth Ave., New York City.

Theatre Guild, Inc., 245 W. 52nd St., New York City.

MUSIC

American Federation of Musicians, 570 Lexington Ave., New York City.

American Guild of Musical Artists, Inc., 2 W. 45th St., New York City.

American Guild of Organists, 630 Fifth Ave., New York City.

American Society of Composers, Authors, and Publishers, 30 Rockefeller Plaza, New York City.

Cantors' Registry, 36 E. 7th Street, New York City.

Grand Opera Guild, 250 W. 57th St., New York City.

National Bureau for the Advancement of Music, Inc., 315 Fourth Ave., New York City.

National Music League, 130 W. 56th St., New York City.

Oratorio Society of New York, 113 W. 57th St., New York City.

Philharmonic Symphony Society of New York, 113 W. 57th St., New York City.

DIVISION XXVII

EDUCATION

ELEMENTARY EDUCATION

By Wilma Leslie Garnett
Associate Professor, Kent State University

THE TEACHER SALARY QUESTION

It may be prognosticated that 1947 opens a new era for elementary education. Unmistakable signs of the new era prevail. Even the growing pains are now acute. For example, the problem of teachers' salaries is a cause of suffering in certain parts of the country. In St. Paul the largest and longest teachers' strike involved 1,160 teachers and 30,000 pupils. This strike was, ironically, negotiated by an artisans' unit of the American Federation of Labor. Teachers are taking time out to look after their economic welfare. There will be considerable pain resultant as teachers the country over make demands on the national, state, and local pocketbooks, trying to wring out just payment for the great service they render. The salary problem is only one of the growing pains implying the birth of a new era in education. Something must be done, and shortly, to alleviate the salary pain or a more serious condition of teacher shortage will make malignant inroads on the bulwark of democracy. That condition is so serious now that persons less sanguine than the Pollyanna philosophers fear that results may prove fatal to the good of this country. How fatal, one may gather from these figures: 60,000 teaching jobs were not filled this year; at least 350,000 teachers have left the profession for more lucrative employment since 1939. There are now 19,000,000 children in the elementary schools; by 1954, there will be 23,200,000. Teachers in greater numbers than ever before are needed to educate the elementary school children of the United States for the work of tomorrow.

Adequate salaries will be needed to attract excellent teachers. At present, a teacher makes on an average, $1,900 a year. Compare that with the common laborer's average of $2,400 a year and the bricklayer's average of $4,500 (in New York) to $3,250 (in Charlotte). These averages make no allowances for overtime for which the laborers are paid. (See *Cleveland Plain Dealer,* Dec. 30, 1946.)

Some alarm has been felt about the fact that teachers' strikes thus far seem to have been incited by the handworking unions. Those alarmed say that the teachers are taking a short way out and that they will sorely regret doing so. They argue that, in the long run, the teachers would profit more by forming their own organization and launching a popular campaign to gain their ends.

California is aware of the crucial shortage of teachers and has opened a recruitment program. In that state, with its excellent record, there are 14,000 out of 50,000 teachers on substandard (emergency) certificates. In some states conditions are much worse. For example, in one of the states usually holding high standards along lines of certification, one teacher out of ten is teaching on a standard certification basis. Recruitment programs are sorely needed, coupled with assuredly good salaries. California adopted on Nov. 5, 1946 an amendment to the State Constitution which provides $2,400 as a minimum salary for all regular teachers. This is the minimum advocated by the National Education Association and other groups. Several states are taking corrective action on this grave matter of salaries in the hope that good people may again be drawn to the teaching profession.

SCHOOL FINANCING

The government has the primary responsibility in giving direction to school expenditures. Federal, state. and local governments have taken shares in the costs, the states bearing the greatest part of the burden.

The ten recommended goals in school finance widely achieved are: total amount of bonded indebtedness regulated; local taxes, except for debt service, applied to general educational program; state revenues sufficient to pay state appropriations to education in full; requirements for participation in state funds equitable; local school systems with authority to issue bonds; local school units to levy general property taxes for school purposes; state appropriations sufficient to meet state's share of cost of education; school funds expended without discrimination; requirements for participation in state funds objective; and local administrative units free to seek and develop progressive educational methods. ("School Finance Goals," National Education Association, *Research Bulletin,* Vol. XXIV, No. 3, October, 1946.)

TEACHER RECRUITMENT ARGUMENTS

Effective recruitment will have to include some promise of freedom from want in old age. At present, only one state offers no old-age protection. Joint-contributory reserve systems are provided in 98.5 per cent of the states. These systems will have to be augmented considerably to make them attractive as recruitment arguments.

Certain major trends show up in the professional literature of the day; what is more significant, the trends are being treated in the newspapers, news magazines, and magazines from almost every group of thinkers in the country. The country is more education-conscious than ever before. The G. I. Bill will, by its moral power, make better the education for the elementary school child of today and tomorrow. The women who went beyond their homes to work in the war period will demand more and better education for their children. One might say that a good outcome of the past war is this interest generated in making education count in establishing for this country the evolving American way.

EARMARKS OF THE GOOD SCHOOL

The earmarks of the good school today, as a demanded expression of the present trends of philosophy backing up elementary education are:

The school is as good as the people of the community make it.

The school is for the children, but is a communal institution in which children, administrators, teachers, board members, service people. and all other members of the community interested work together in a search for truth. The school changes the community. The key persons in the school are the teachers. It is important that the teachers of the most important people in our country, the elementary school children, be well educated and be cultured individuals.

It is the obligation of the school to stimulate as much creative thinking as possible. The country in which constructive, creative thinking is done has a chance of extended survival.

A supplementary exposition of why American schools should be exponents of the foregoing philosophy is of more than momentary significance. American schools must be good to promote international welfare, not mere national good. America may give good to the world if it has developed that good; America may be the recipient of worthy ideas developed by other countries if aware and tolerant of those ideas. The schools of America must tie into the program of UNESCO, as it is developed, for that program is an expression of interest in international well-being. Here are some of the phases of the UNESCO program being devised now to take into account the elementary school child. Under the UNESCO program such proposals as these are being implemented: use of films and radio in classrooms to promote international understanding; exchange of good books and periodicals for children; exchange of teachers and students; international circulation of newspapers; and International Ideas Bureau.

The main function of UNESCO is that of promoting the free flow of ideas by word and image through the free use of media of mass communication. In short, mass media are to be utilized for international exchanges of culture. Such exchanges, if effectively made, may well be substituted for exchanges of such political facts as may generate wars for the future. Let the next generation of thinkers (the elementary school children of today) be taught to exchange cultural ideas. For this reason, it is important to have the elementary school program incorporate phases of the UNESCO program and to implement those phases.

SCHOOL HOUSING PROBLEM

During the war years, school-housing became a severe problem in almost all areas of this country. Buildings deteriorated and could not be adequately restored. Equipment was insufficient when available in any quantity. Now the cry is for better housing, better equipment. Many new school structures will be erected, plans for which have been made during the past year or two.

Featured in many of the new elementary school buildings will be these ideas: modernistic design in architecture; each building suited to unique task and setting; flexibility in school building; beauty as essential for object lessons; effective landscaping; steel-liberated structures; machine-age standardization; communal service features. Buildings are reflections of culture. A community school for an average neighborhood—a school housing 1,000 children—should include classrooms, kindergarten, nursery school, auditorium, library, music rooms, art rooms, science rooms, offices, health center, lobby and lunch room, play room, toilets, gymnasium, out-of-door play grounds, and handball courts. As to lighting, heating, and ventilating, appropriate systems have been scientifically standardized by the acceptance of manufacturers' recommendations as made to reliable architects and builders in the various sections of the country.

The buildings as such should advance education's aims. Safety, sanitation, and comfort are considered as matters of course; the adjustment of the plant to improved teaching procedures and to the effective functioning of a philosophy of education that makes the school communal is a recognized essential of 1946-1947 planning. The school must be a place where important things are happening in the search for truth. Such a school will be functionally planned by teachers, parents, and children. The recommendations made by these citizens will be given scientific and artistic expression by school architects and builders.

Essential equipment and furniture, good seats, good desks, proper tables, sound and film equipment, musical instruments, typewriters, and the like will find their places in these schools. Scientific manufacturers will help educate the public to that, and money will be forthcoming for material goods in these new schools to result from the 1946 plans.

IMPORTANCE OF BOOKS

There is one type of material, a most important class that will not be provided for with such alacrity by the taxpayer. It is by far the most important of the items, for it is the material that touches the field of the spirit. Through it teaching is effected. We refer to books. Good buildings and fine equipment, even superior teachers, will not prove adequate if good books are lacking. Huge budgets for books of merit are asked by leaders in the field of elementary education. Cooperation with public libraries is sought. Teachers who know good literature for both adults and children will be able to advance this essential phase of the new teaching program. No other teachers can do it.

In this connection, note should be made of the guidance given by professional and literary magazines. Annotated book lists, highly selective, are presented from issue to issue in many of the magazines. *The Elementary English Review* is especially helpful in this respect, as may be gathered from a glance at well-written articles in two issues of the 1946 magazines. Such titles of articles as these appear: "Children's Books of the Year"; "The Christmas Spirit and Books"; "Biography for Young Readers"; "Vitalizing the School Library"; and "Our Library."

In the Young Folks Book Club, a new organization for children, young persons recommend books for children. The first four books chosen were: *Three Gay Tales from Grimm,* Wanda Gay, translator; *Peter Churchmouse,* Margot Austin; *The Moffats,* Eleanor Estes, illustrated by Louis Slobodkin; and *Mystery of the Secret Drawer,* Helen Fuller Orton, illustrated by Sandra James. The educators are becoming aware of an important truth. Children may be the best of critics in choosing their books for reading. Close cooperation with the library is assumed to be essential.

MAGAZINES AS FACTORS

If articles in magazines for parents be indications of the special interests parents have in the elementary education of today, the major interests are these: discipline of children; psychology of childhood; entertainment for children; play materials; nutrition; books for boys and girls; childhood norms—physical and behavior; the movies, the radio, teachers.

The topics listed below have been treated in many magazine articles of the past year: studies in child development; personality patterns; learning social skills; the individual, not the mass; challenge of music education; music in therapy; radio listening; rural education; transportation problems; overcoming racial prejudices; education in family living; children and their books; intelligence and testing for intelligence; making test results function in teaching; guidance possibilities; community health projects; community study; experimenting for better curriculums and for better courses of study; geography as background for international mindedness; supervision; the language arts program; speech disorders; speech training for all; language and behavior; communication; vocabulary building; spelling; reading readiness; problem solving in arithmetic; films in education; making movies; incidental learnings; learning curves; retention of concepts learned; influence of belief.

GENERAL ADMINISTRATION PUBLICATIONS

American Education in the Postwar Period: Structural Reorganization. Forty-fourth Yearbook of the National Society for the Study of Education, Part II. Chicago: Distributed by the University of Chicago Press, 1945.

Building a Better Southern Region through Education: A Study in State and Regional Co-operation. Edited by Edgar L. Morphet with the Assistance of the Co-ordinators, Chairmen, and Executive Committee. Tallahassee, Florida: Southern States Work-Conference on School Administrative Problems, 1945.

Educational Policies Commission and Problems and Policies Committee. *Source Book on Federal-State Relations in Education.* Washington: American Council on Education, 1945.

CURRICULUM, METHODS OF TEACHING AND STUDY, AND SUPERVISION

Community Living and the Elementary School. Twenty-fourth Year-

book of the Department of Elementary School Principals. *National Elementary Principal,* Vol. XXV, No. 1. Washington: Department of Elementary School Principals of the National Education Association, 1945.

The Measurement of Understanding. Forty-fifth Yearbook of the National Society for the Study of Education, Part I. Chicago: Distributed by the University of Chicago Press, 1946.

Schneideman, Rose. *Democratic Education in Practice.* New York: Harper & Bros., 1945.

Barr, A. S., and Others. *The Measurement of Teaching Ability.* Madison, Wisconsin: Dembar Publications, Inc. (114 South Carroll Street), 1945.

Leadership through Supervision. Eighteenth Yearbook of the Department of Supervision and Curriculum Development of the National Education Association. Washington: National Education Association, 1946.

READING

Betts, Emmett Albert. *Foundations of Reading Instruction with Emphasis on Differentiated Guidance.* New York: American Book Co., 1946.

Dolch, E. W. *A Manual for Remedial Reading,* Champaign, Illinois: Garrard Press, 1945 (Second edition).

Gray, William S. (compiler and editor). "The Appraisal of Current Practices in Reading." *Proceedings of the Annual Conference on Reading* Held at the University of Chicago, Vol. VII. Supplementary Educational Monographs, No. 61. Chicago: University of Chicago Press, 1945.

Greene, Harry A., and Gray, William S. "The Measurement of Understanding in the Language Arts," *The Measurement of Understanding,* Forty-fifth Yearbook of the National Society for the Study of Education, Part I. Chicago, Illinois: Distributed by the University of Chicago Press, 1946.

Guiding the Growth of Reading Interests. Educational Research Bulletin of the Bureau of Reference, Research and Statistics, No. 8. Prepared by Division of Instructional Research, May Lazar, Research Assistant in Charge. Brooklyn, New York: Board of Education of the City of New York, 1945.

Fenner, Phyllis R. *The Library in the Elementary School.* Prepared for the Service Center of the American Education Fellowship. New York: Hinds, Hayden, & Eldredge, Inc., 1945.

How Children Develop: A Revision of "Child Development Study." By the Faculty of the University School. Adventures in Education, University School Series, No. 3. Columbus, Ohio: College of Education, Ohio State University, 1946.

Fessenden, Seth A. *Speech and the Teacher.* New York: Longmans, Green & Co., 1946.

Ordan, Harry. *Social Concepts and the Child Mind.* New York: King's Crown Press, 1945.

School Libraries for Today and Tomorrow. Prepared by the Committees on Post-war Planning of the American Library Association, Division of Libraries for Children and Young People and Its Section, the American Association of School Librarians, Mrs. Mary Peacock Douglas, chairman. *Planning for Libraries,* No. 5. Chicago: American Library Association, 1945.

De Huszar, George B. *Practical Applications of Democracy.* New York: Harper & Bros., 1945.

Knowlton, Daniel C. "What's Ahead in the Social Studies?" *Looking Ahead in Education.* Edited by J. Wayne Wrightstone and Morris Meister. Boston: Ginn & Co., 1945.

Taba, Hilda, and Van Til, William (editors). *Democratic Human Relations.* Sixteenth Yearbook of the National Council for the Social Studies. Washington: National Council for the Social Studies, 1945.

Willcockson, Mary (editor), and Horn, Ernest (consultant). *Social Education for Young Children in the Kindergarten and Primary Grades.* Curriculum Series No. 4.

Washington: National Council for the Social Studies, 1946.

American Association of Teachers Colleges. Twenty-fifth Yearbook. Oneonta, New York: American Association of Teachers Colleges (Charles W. Hunt, secretary, c/o State Teachers College), 1946.

Association for Student Teaching. *Practicing Democracy in Teacher Education.* Twenty-fifth Anniversary Yearbook. Lock Haven, Pennsylvania: Association for Student Teaching (Allen D. Patterson, secretary-treasurer, c/o State Teachers College), no date.

Prall, Charles E. *State Programs for the Improvement of Teacher Education.* Prepared for the Commission on Teacher Education. Washington: American Council on Education, 1946.

SELECTED REFERENCES FROM THE LITERATURE ON EXCEPTIONAL CHILDREN

Ingram, Christine P., in collaboration with Elise H. Martens, and Katherine M. Cook. *Education in Training Schools for Delinquent Youth.* United States Office of Education Bulletin No. 5, 1945.

Kvaraceus, William C. *Juvenile Delinquency and the School.* Yonkers-on-Hudson, New York: World Book Co., 1945.

Ewing, Irene R. *Lip Reading and Hearing Aids.* Manchester, England: Manchester University Press, 1945.

CHANGES IN INSTRUCTIONAL PRACTICES

Changes in instructional practices are not too easily discovered in this period. Poorly prepared teachers are retarding factors in progress upward along the most important lines, the instructional. Such lines of progress as appear in the professional articles and books for the year are in these areas, from a summary of which trends of improvement may be noted:

1. The interest in a health program, including the practice of good eating, is growing. Some educators realize that the school will have to point, if not dictate, the way to proper feeding of children.
2. Provision is being made for some out-of-door school life in science, as well as in play.
3. More musical education is being demanded, more instrumental work in the grades, also more music appreciation.
4. There is a stronger interest in geography as a field in which to study world-mindedness, or internationalism.
5. Some attention is being given to speech education as an essential phase of the language arts program.
6. The language arts unit is developing to embrace reading, speaking, writing, spelling, and dramatization.
7. Schools are providing a larger amount of individualized instruction than ever before.
8. Nursery school and kindergarten education is gaining support.
9. Exceptional child programs are developing.
10. A need is being felt for less spreading out into new activities. Rather, the feeling is growing in favor of thorough work in basic fields: health, culture, speech, science, and the fine arts.
11. By culture is meant an education in beliefs, that is, character education. As Erika Mann has well said: "The elementary child, too, needs character-building education."
12. Science and the humanities are gaining support.

CURRICULUMS

Three special demands are now being made upon the newly developed or developing curriculums for elementary schools: the first, in regard to home-making; the second, in regard to American history; the third, in regard to religious education.

Admittedly the home is the first agency of education. The school and the home of today are trying to articulate their programs through holding parent conference groups, giving parents representation on curriculum committees, making the school a cultural center for the community, urging school visitation by parents, featuring adult and child education for home-making. Many are the demands for education in home-making.

The children of the elementary school are in what Alfred North Whitehead calls the "Romantic Period" educationally. The call for more American history in the school program may be accepted in this period through the presentation of biography and historical fiction evaluated in terms of authenticated historical accounts. The better curriculums are making place for more of this type of teaching of American history.

A third demand in revising curriculums is in the field of religious education. Some assertions are being made to the effect that religious education must be made more accessible than it has been to all children. Religious leaders have published this platform as their policy-making set of standards for developing weekday church schools:

1. A year of planning before launching the program.
2. All religious groups working closely together.
3. Parents accepting their responsibility for the school and supporting it in every way.
4. Public-school officials co-operating heartily without controlling.
5. A representative and reliable weekday church school board continuously on the job.
6. A course of education in religion as well planned and implemented to its purposes as the courses in the public schools are to theirs.
7. Teachers as well trained for teaching religion as the public-school teachers are trained for their work.
8. A supervisor—trained, experienced, and religious—working with every school.
9. An expenditure per pupil (in proportion to the teaching time) equal to that for his public-school education.
10. The spirit as well as the letter of the law preserved in all relationships. (*International Journal of Religious Education,* June, 1944.)

OUTLOOK FOR ELEMENTARY EDUCATION

A recent article in *The New York Times* makes one feel hopeful about the outlook for education, especially elementary education, in this country. The review is by Benjamin Fine, who has given this hopeful heading for the review: "Business and Labor Leaders Consider Ways of Meeting Crisis in Nation's Schools." This caption is an expression on the positive side, for when Business and Labor cooperate on a problem as important as the crisis in this nation's schools, there will be some good results. With their demand that American children be taught the "industrial facts of life," there will, of necessity, be associated and brought to the foreground other demands. Their demands are backed by such arguments as these: education is an essential instrument in the expansion of commerce, industry and agriculture; money spent for education is an investment that can well be afforded in increasing measure when related to the improvement of local economic conditions; educational programs should be made to apply more directly to the community; and if we are to maintain the American tradition of private initiative as our economy expands, sound and immediate measures to improve our schools are necessary.

DELINQUENCY

When FBI Director J. Edgar Hoover comes forth with the assertion that unless better pay for teachers is forthcoming, the nation will invite greater juvenile delinquency. The younger the child, the more susceptible he is to character-building education, according to Mr. Hoover. The elementary school children may be kept from delinquency by well-qualified teachers. His assertion is: Our penny-wise and pound-foolish attitude toward our educational system is one of the tragedies of America.

(*Cedar Rapids Gazette,* Christmas, 1946.)

FREE TEXTBOOKS

The free textbook situation is increasingly encouraging in our country. At least 34 states make legal provision for requiring the provision of some free textbooks in the elementary schools. Almost all other states have permissive legislation on this point. The viewpoint is this:

"In those states supplying any or all textbooks the initial procedure has been to provide for the elementary grades first—frequently the lower elementary grades—and to expand the provisions in grade order. This is in accordance with the development of public education programs based upon the principle that the first essential is to insure elementary educational opportunities for all. It is also to be recognized that more pupils can be served by this procedure for the amount of money expended. In general, textbooks have been provided before other materials such as paper and pencils, which are regarded as consumable on initial issue, whereas textbooks are reissued and frequently made to serve in turn several pupils.

"The movement for free textbooks—and while more recent, for other instructional materials also—has been continuous, and also cumulative with respect to the articles supplied. The movement has in general not been interrupted by adverse legislative action or change in practice. The principle that free instructional materials are a condition for free, universal, public education for a democratic social order is apparently accepted in theory. In practice it is considered as a goal toward which at least some preliminary steps have been taken by all states." (Maris M. Proffitt, *State Provisions for Free Textbooks and Instructional Materials.* Bulletin 1944. No. 1. U. S. Office of Education.)

STATISTICAL

In conclusion, let us note the latest summary of statistics on state school systems, as given out by the U. S. Office of Education, in an effort to get our bearings for the program to come:

Estimated Population (Continental United States), 5–17 years of age, July 1, 1944	28,930,000
Enrollment	
Elementary grades	17,713,096
High school grades	5,553,520
High school graduates	953,254
Average daily attendance	19,602,772
Average number of days schools were in session	175.5
Average number of days attended by each pupil enrolled	147.9
Percent attendance is of enrollment	84.3
Average value of school property per pupil enrolled	$341
Supervisors, principals, teachers and other instructional staff	
Number	865,038
Aggregate Salaries	$1,494,506,929
Average Salaries	$1,728
Current expense (less interest)	
Amount	$2,293,337,099
Per pupil in average daily attendance	$116.99
Interest	$96,804,865
Capital outlay	$53,856,462
Number of pupils transported at public expense	4,410,362
Number of one-room one teacher schools	96,302
Income from taxation and appropriation	
Amount	$2,478,466,811
Percent from state	33.6*

* *Statistical Circular*, September, 1946. U. S. Office of Education.

CONCLUSION

Probably 1,000,000 teachers are needed for an effective program in the elementary and high schools. Even a call for a million will make recruitment a necessity. Federal, state, and local attention to this matter is needed. Salaries for elementary teachers should be established the country over at a $2,400 minimum. Federal aid may be necessary at the present time, but could be tapered off by legislative provision as the states are able to take hold.

Standards of certification can and should be held at a minimum of a four-year college training program as soon as possible. Salary, recruitment, colleges of training, and state departments of education must work cooperatively on this problem.

The United States Office of Education may well give active guidance as requested to do so, not merely consultant services. The nation needs that professional guidance. Dictation is not implied and would not be the result if the guidance given were strictly professionalized.

The nation must put up more money for elementary education; must demand well-qualified teachers; must ask for education in the important things of life as they concern elementary children; must see that character education, the fundamental, is given its rightful place as the schools of 1947 begin a program of elementary education stressing creative thinking with the next generation. That generation will be made up of the elementary school children of today.

SECONDARY EDUCATION

By Robert S. Gilchrist
Minneapolis Public Schools
and
Kenneth M. Peterson
Tenafly (N. J.) Public Schools*

ENROLLMENT

Approximately 6,200,000 students enrolled in Grades 9 to 12 in the school year 1946-47 in public and private schools of America. About 425,000 attend private and parochial schools. No marked changes in enrollments have taken place during the past three years. Data available separately for junior and senior high schools show reductions for junior high schools and increases for senior high schools. Senior high school students are returned from industry and the armed services, while at the junior high school level the low birth rates occurring between 1932 and 1936 caused decreases. Basic data showing the trend in public secondary education since 1900 and through 1943-44 are now available. The enrollment in public schools in Grades 9 to 12 was 519,251 in 1899-1900. By 1910 this number was nearly doubled, and by 1920, 2,200,000 were enrolled. By 1930, 4,400,000 were attending Grades 9 to 12 in the public schools. The upward trend continued until 1940-41, when 6,713,913 were enrolled. The war caused a decrease in enrollment from 1941-42 through 1943-44 at which time 5,553,520 were enrolled in Grades 9 to 12. (U. S. Office of Education.)

TEACHER CRISIS

In 1946 the teacher crisis in America alarmed laymen as well as educators. Sixty thousand teaching positions were unfilled during 1945-46. One teacher in ten held his position on an emergency certificate. The 108,000 emergency teachers could not meet even the lowest standards in their respective states. Only 15 states and the District of Columbia now require college graduation for a standard teaching certificate. In some areas high school graduation was sufficient preparation to meet legal teaching requirements. Since 1939, 350,000 teachers quit the profession entirely. Men teachers were reduced to only 15 per cent of the total number. Enrollments in colleges which prepare teachers were far below normal. The number of women in teachers' colleges dropped one-third from 1941 to 1943. The number of men teachers in teachers' colleges in October, 1945 was 13,000 as compared with 39,000 in the fall of 1941. In 1920, 22 per cent of all college students enrolled in teach-

* The writers made extensive use of the following in collecting information for the review; *The Clearing House*, *Bulletin of the National Association of Secondary School Principals*, *School Life*, *Journal of the National Education Association*, *School Review*, *Progressive Education*, and material supplied by the U. S. Office of Education and the American Council on Education.

ers' colleges; in 1930, 16 per cent; and in 1946, seven per cent.

The primary cause of the teacher shortage is low salaries. Low salaries were the result of many circumstances. Teachers' salaries have always been very inadequate. They were lowered further during the depression. Teachers' salaries were formerly not subject to Federal income taxes. Wartime inflation and post-war inflation have served to intensify the problem. For the year 1945-46, the estimated average teacher's salary in the United States was $1,950, while the minimum for professional employees in the Federal Government was $2,640.

In an attempt to meet the teaching crisis, the National Education Association sponsored a national emergency conference on teacher education and supply. Three hundred leaders representing professional, government, civic, and labor organizations attended the conference. Some of the major recommendations were: that a Commission on Professional Standards for Teacher-Preparing Institutions be established by the NEA; that Federal sources provide an additional $2,000,000,000 to meet educational demands for 1946-47; that the organized profession set up standards and policies in such matters as salary schedules, certification, requirements, and methods of procedure in the selection of teachers; that the profession require a five-year program of preparation for teaching which includes guided practical experience or active work with children; that educational opportunities be more nearly equalized; that a professional standard for teachers salary schedules be not less than a level of $2,400 a year for the beginning teacher with a bachelor's degree, with provisions for salary advances in recognition of experience and advanced preparation up to a maximum salary at a truly professional level.

A week later the NEA Representative Assembly in Buffalo passed unanimously a motion recommended by the conference establishing a commission on teacher education and professional standards charged with the responsibility of implementing the recommendations of the National Emergency Conference on Teacher Preparation and Supply. The new commission has before it the task of leading the teachers of America in the same kind of program through which physicians, dentists, lawyers, engineers and other organized groups have lifted the status of their professions in the life of the nation.

THE HARVARD REPORT

General Education in a Free Society, published by the Harvard Committee, has had a truly marvelous appeal to educators. It was published a year ago without promotion by any educational organization. Practically every organization dealing with secondary education has scheduled a meeting to discuss its findings. The Educational Policies Commission of the National Education Association was responsible for *Education for All American Youth.* The National Association of Secondary School Principals issued an 80-page pamphlet, *Planning for American Youth,* a summary of *Education for All American Youth,* which has received wide reading and discussion.

Whatever the reader's personal opinion of the two books, he will undoubtedly agree that his thinking has been challenged by the repercussions they have created in educational literature. Thus, Franklin Bobbit (*School Review,* June, 1946) affirms: "The committee (Harvard) ought to extricate its small book and enlarge it into a well rounded and well wrought document. . . . If they would round it out and put it into clear, convincing terms they could make of it the authoritative charter of the nation's much needed educational advance."

A contrasting viewpoint is expressed by Prof. Will French of Teachers College and Chairman of the Committee on Curriculum Planning and Development of the National Association of Secondary School Principals. French admits the general approval given to the Harvard Report by Colleges but he emphasizes that the high school may take issue with those parts dealing with secondary education upon two scores. First, the question of whether there is now the nearly complete absence of a common program of education at the high school level which is reported, and second, the question of whether the committee's plan of general education for the high schools is an effective one for use with student bodies of present-day high schools which increasingly represent the entire range of learning ability.

YOUTH CONFERENCE

A two-day Youth Conference was sponsored by Teachers College. The conference was an outgrowth of President Conant's (Harvard) appeal for "A Truce among Educators" and was held at Teacher's College, Columbia University in November 1946. Many of the educators present expressed the belief that the most far-reaching proposal included in the committee reports was the suggestion that a "search for talent" be instigated under some national organization, such as the American Council on Education. Through testing, it would discover talents among youth earlier and the education of these superior students would be subsidized in cases of financial need.

In the Conference the reports of five committees were reviewed and altered by a group of about 200 educational scholars representing Liberal Arts Colleges, Teachers Colleges. Professional Organizations from all sections of the country. Committee report titles are: 1. The Responsibility for Educating All Youth. 2. The Character of General and Special Education in the Secondary School. 3. The Special Education in College of Potential High School Teachers. 4. The Discovery and Development of Talent in Youth (referred to above). 5. Pupil-Personnel Records Essential to the Education and Post-High School Placement of All Youth.

POLL OF EXPERTS

The *American Magazine's* Poll of Experts (February 1946 issue) reported that the schools' most unsatisfactory job is in training young people for personal and family responsibilities. The experts agreed that there should be less emphasis in the schools upon (1) drill and memorization; (2) requirement of foreign and ancient languages; (3) cold formality, as found in mathematics and English grammar, marks and preparation for college; and (4) high school athletic interschool competition.

More emphasis, according to the experts, should be placed upon education for citizenship, improvement of health education and physical fitness programs, preparation for marriage, vocational guidance and training and work experience, instruction in science for our atomic age, and finally, making school work more alive and interesting.

NATIONAL COUNCIL MEETING OF SCHOOL OFFICERS

The state school officers at their national council meeting in Buffalo in February, passed the following resolution: "That we recognize the critical shortage of post-secondary, academic, and technical educational facilities for veterans and civilians, and that we urge action upon the state departments of education throughout the nation to remedy these conditions, in so far as possible by augmenting existing educational resources with the addition of the 13th and 14th grades, capable of providing needed academic and technical education."

The development of technical institutes in New York State, the associated colleges which are sponsored by Cornell and other universities in New York State, the adoption of the K-6-4-4 plan in Stockton, Calif. are illustrative of the developments which are taking place throughout the country to supply the need indicated in the resolution passed by the chief state school officers.

MILITARY TRAINING

No bill for universal military training in peacetime was passed during the 79th Congress. Plans, however, were made by the War Department to bring before the 80th Congress a bill for universal military training. In February 1946, a statement was made by executive and legislative committees of the National Association of Secondary School Principals to indicate the position of the secondary school principals of the United States on the question of compulsory military training. The Secondary School Principals Association is opposed to the adoption of compulsory military training during peacetime. It does not believe that the program of universal compulsory military training during peacetime as proposed by our military leaders will give us the kind of national defense and security that all Americans desire.

The Secondary School Principals Association is ready to support a program that will give this country adequate defense and necessary security for the maintenance of its social, economic, and spiritual well-being. The Association emphasizes the importance of using all instrumentalities available for the elimination of war as a way to resolve international conflict. The Principals Association believes that the nation should be devoted to the establishment of a will for peace through the abolition of conscription and reduction of costly armaments. It believes that national defense and security can be adequately provided through the establishment of a professional Army, Navy and Air Force, by voluntary enlistments and the enlargement of our program of reserve officers' training in secondary schools and colleges on a voluntary basis.

Educators emphasize the importance of establishing an adequate and effective program of education for all youth in our schools. This program should especially include health education. During the Second World War, about 5,000,000 men were rejected on the basis of physical disability. In a statement before the Military Affairs Committee of the House of Representatives Nov. 28, 1945, Donald Dushane, Secretary of the NEA Commission for the Defense of Democracy through Education, pointed out some of the improvements that could be attained for American education with the same amount of money necessary for compulsory training. With $3,000,000,000 per year the following could be done: (1) construct a ten-room modern school building in every county in the United States each year; (2) construct a $50,000 library in every county in the United States each year; (3) construct annually a $150,000 hospital in each county; (4) employ ten full-time school and public health doctors and ten full-time school and public health nurses in every county; (5) purchase ten new modern school buses in each county each year; (6) maintain one psychiatric and behavior clinic in every county; (7) provide ten recreation and juvenile guidance workers in every county; (8) bring all schools of the country up to a reasonable standard of efficiency; (9) provide free education for the 3,000,000 children under 18 who are now not attending school; (10) meet the payroll of one junior college with ten instructors in every county; (11) provide all the expenses of a three-year post-graduate course for 10,000 selected students each year; (12) pay the full maintenance and tuition at college or technical school for one year of the 900,000 boys who would be conscripted under the May bill; (13) erect a $750,000 trade and technical school in each congressional district each year. This would leave an unexpended balance of $15,300,000 annually. If in the second and subsequent years, additional buses, hospitals, and libraries were not needed in each county, and a second technical school were not needed in each congressional district, the cost would be reduced to less than $2,000,000,000 a year.

LAY PARTICIPATION

The value of laymen's contributions to American education was given official recognition in March of 1946 when Commissioner Studebaker called together the newly established Citizens' Federal Committee on Education, in Washington, D. C., for the purpose of "advising the Commissioner of Education on policies and programs of service to education to be carried on by the United States Office of Education." It is planned that the committee's membership be representative of labor, business, agriculture, manufacturing, home-makers, professions, veterans' groups, religious groups, and Negro groups.

Among the critical reviews regarding education was an article by Harlan Logan, Editor of *Look Magazine,* who attributed the failure of American Education to confused objectives, out-dated evaluation, underpaid and misdirected teachers, inadequate equipment, and inefficient techniques.

Mark Starr, educational director of the International Ladies' Garment Workers Union in *Labor Looks at Education* (the 1946 Inglis Lecture on Secondary Education) maintained: "The basic trouble of our uncertainty about education at the present moment is that we are not sure what sort of citizens we want to produce. We are torn between education and money grubbing. Do we want to prepare students for civic responsibility—the wise use of leisure—or is it enough to train them for making a livelihood? Do we estimate the value of a man by the richness of his thought, the breadth of his reading, and his store of interesting experiences brilliantly described, or do we admire the 'big shot' whose skills are strictly commercial and whose claim to fame is based upon the size of his bankroll? . . . If we are not honest with ourselves, we can not be honest with our students. . . ."

Henry A. Wallace, Secretary of Commerce, described "The Challenge of Education" (January *NEA Journal*) as education for character—"the kind of character which enables us to get along in a decent, humane cooperative way." Wallace believes that education is the "most important single activity of civilized man." He maintains that some practical method must be found to "teach the values of decency and kindness—to bring the social ideas of the Sermon on the Mount into our daily educational routine." He proposes that we educate children "not only to make a success in life as competitive individuals, but also, and even more important, to work together in the service of the general welfare."

The critical situation in teachers' salaries caused many lay groups to participate on behalf of education. Never before have the press and radio and lay groups taken such an active part. Widely read magazines carried feature articles. Radio presented programs pointed toward informing the public on the greater need for support of education. Parent Teacher associations and other community organizations throughout the country participated.

FEDERAL AID

During 1946 substantial progress was made in respect to obtaining Federal aid for education. President Truman, in his annual message to Congress Jan. 21, 1946, made a strong appeal to that end.

The bi-partisan sponsored version of S181 introduced in the Senate March 27, 1946 included: (1) Provisions for setting up a minimum foundation or floor program for American public education, and (2) an ingeniously devised formula to encourage greater state and local effort to finance public elementary and high schools. The bill provided $225,000,000 a year for making possible a minimum education program costing at least $40 a child for every boy and girl in the United States.

The possibility for favorable consideration of Federal aid by the 80th Congress is indicated by the comments of Senator Hill of Alabama, one of the sponsors of the education bill. "When the new Congress convenes, it seems to me its first day should be distinguished by enactment of legislation as embodied in Senate Bill 181. There is no reason for delay with further hearings. We have the facts. We know the need. We must have action."

U. S. OFFICE OF EDUCATION

Early in 1946, Commissioner Studebaker began regrouping the United

States Office of Education into eight divisions in accordance with his previously announced "Plan of Organization to Improve the Services of the United States Office of Education." The divisions are: School Administration, Auxiliary Services, Central Services, International Educational Relations, Elementary Education, Secondary Education, Vocational Education and Higher Education.

Dr. Galen Jones was designated as director of the division of secondary education. Early in 1946, two specialists were appointed for secondary education, Dr. Howard Anderson, in the field of social studies, and Dr. Phillip Johnson in the field of science. Both men are recognized leaders in their respective fields. Later in the year Roosevelt Basler, an Illinois educator, was appointed chief of instructional problems. It is proposed to complete the organization for secondary education in the Office of Education by the eventual employment of a specialist in each of the subject fields together with adequate research assistants.

CURRICULUM TRENDS

In his opening address on "The Emerging Social Setting for Education," at the Association for Supervision and Curriculum Development's first post-war conference held in St. Louis early in 1946, Dr. Goodwin Watson suggested directions which the school must take during the next several years. He proposed that the speed with which the world has moved ahead in recent years almost makes our present conception of curriculum outmoded, and that in the light of these rapid changes, the schools today need to teach more about the way in which government functions, to be more concerned with the development of moral values than material production and to realize that the survival of our own civilization depends in a large degree upon the value we place upon human beings.

Many developments have taken place during 1946 which give promise of meeting the needs of high school girls and boys. A resolution having to do with the life adjustment training of a majority of secondary school pupils was adopted at a meeting of the Consulting Committee on Vocational Education in the Years Ahead which was held in Washington, D. C. in 1945. The resolution, which was presented by Dr. Charles A. Prosser, requested the U. S. Commissioner of Education and the Assistant Commissioner for Vocational Education to call a conference to consider the problem of student training and preparation.

Under the leadership of the Office of Education a two-day conference composed of representatives from both the Office of Education and outstanding persons in the field of secondary education was held in New York City. In this conference several pertinent problems were recognized: the identification of the youth with which Dr. Prosser's resolution was concerned, their characteristics, their total number, their early discovery, the means to be used in determining them, the educational needs of these youth, and the kinds of educational programs that will be adequate and proper for them, the provisions that school will need to make in order to furnish youth feasible and desirable programs. The Office of Education planned four regional conferences which were held during 1946 in Chicago, Denver, San Francisco, and Chattanooga. After the work of these conferences has been reviewed, the agenda will be developed for a national conference to be held at the Office of Education.

BASIC ISSUES IN SECONDARY EDUCATION

A further indication of the type of problems with which secondary school educators are concerned at the present time is shown by a recent committee report entitled "Basic Issues in Secondary Education." This report is the work of a consultative committee appointed by George D. Stoddard, Commissioner of Education of the State of New York, to consider postwar problems in secondary education in that state. Some of the questions which were explored in the preparation of the report follow: (1) How many constants should there be in the secondary school program? (2) What is the relation of the system of Regents examinations to the holding power of high school? (3) What is the relation between vocational and general education at the highschool level? (4) What is the place of work experience in the school curriculum? (5) As a result of the war experience, what changes should we undertake with respect to such matters as health and physical education, mathematics and technical subjects, foreign languages, humanities, art, and the social studies? (6) What changes are desirable in the school calendar with special reference to the utilization of the summer period? If the school year is extended, what modification should be made in curricular offerings? For example, do experiences in camping education or Boy Scout programs offer promising leads for regular secondary schools? (7) What is the relation of non-school experience to programs and outcomes in school; for example, in such matters as health, civic participation, character, and recreation? (8) Should there be a compulsory school-leaving age of 18 or of high school graduation (with exceptions based on case histories)? (9) What changes in buildings, fixtures, equipment, and materials are necessary if new programs are to be properly provided?

STUDENT ATTENTION TO SOCIAL PROBLEMS

In many communities students are becoming active in trying to understand and to help solve some of the social problems of the world. For example, at Oak Ridge, Tenn., the secondary school students formed a youth council on the atomic crisis. They have established a pattern that many schools over the country are following. In addition to studying the problems of control of the atom bomb in their classes, the students arranged for evening sessions with their parents and other community leaders. The special issue of their school paper went to 8,000 other schools throughout the country. In August 1946 their own representatives traveled to ten states. They participated in ten radio broadcasts. They wrote more than 1,000 letters to government personnel, to acquaintances, and to students in other localities.

Recognizing that improved human relations at home are necessary for an understanding and an ability to get along with peoples of other nations, schools are giving an increased emphasis to developing effective human relations. Two inter-group educational projects of a national character, involving about 20 large school systems, are being carried on. The American Council on Education is sponsoring a study of Intergroup Education in Cooperating Schools. The Bureau for Intercultural Education is working closely with several school systems, including Detroit, Philadelphia, and Gary, Indiana; helps to staff summer workshops, and has an important publication program. *Intercultural Education News,* published quarterly by the Bureau, is useful for persons who want to keep abreast of current developments. The yearbook of the National Council for the Social Studies *Democratic Human Relations,* by Hilda Taba and William Van Till, is the first book in intercultural education which brings together concrete illustrations of current practices in schools. That secondary schools are facing very realistic problems in the area of inter-group relations is indicated by the strike which occurred at Gary, Ind. in which white students desired to exclude Negro students from one of the high schools. Programs of intercultural education developing throughout the country give great promise that schools can become laboratories in which boys and girls learn to live effectively with one another, regardless of race, creed, or nationality.

SCHOOL HEALTH

On the basis of the findings from Selective Service, physical and mental defects discovered through many secondary schools are given much emphasis in efforts to improve health programs. A national committee on school health policies was formed in 1945, with representatives from each of the major health organizations throughout the country. The committee is now issuing suggested school health policies to guide schools who are concerned in improving their programs. It suggests that parents have the primary responsibility for the health of their children. Every school should establish its own school health council or health committee. Every school system, under whatever jurisdiction it operates, should have a central health council or committee with appropriate representation from all schools and for all groups interested in school health. Schools should work with community health councils wherever they are established, and if necessary they should take leadership in their organization and direction. Specific suggestions are made for school safety and sanitation, provision of a nutritious lunch, and the need for sound mental and emotional health of teachers.

MOTOR DRIVING TRAINING

The Traffic and Safety Department of the American Automobile Association made a comprehensive study to evaluate driver training for high school youth through analyzing the driving records of 3,252 Cleveland, O. high school students. The accident and conviction records of 1,880 high school students who received driver training instruction and 1,372 high school students who received no training were analyzed and compared. The conclusion concerning the reduction of accidents is embodied in the title of the publication.

CONFERENCES ON CONSUMER EDUCATION

During 1946, five conferences have been held throughout the United States on consumer education, at Cincinnati, Columbia, S. C., Philadelphia, San Francisco, and Los Angeles. At these conferences educators and laymen were given an opportunity to become acquainted with a series of teaching learning units for secondary school students which have been prepared by the Consumer Education Study of the National Association of Secondary School Principals. It has been carried on through a grant from the National Better Business Bureau and in cooperation with the national associations of teachers in the five subject fields of business education, home economics, mathematics, science, and social studies. From these conferences it seems to be evident that the American people are tremendously concerned with what is taught and how it is taught in our secondary schools. The conferences have demonstrated the wisdom of educators frequently bringing community leaders into the planning and constructive development of the school program.

COURSES IN FAMILY LIVING

Secondary schools are evidencing an increased concern for giving boys and girls courses in the secondary school which will prepare them for effective family living. In the Highland Park High School (Michigan) all senior boys and girls are required to take a semester's work in preparation for marriage and family life. In this course it is assumed that the best preparation for marriage is the building of a worthwhile, mature, mentally healthy person, who has a good understanding of himself and his place in the world. One of the units in the course has to do with the child in the home, his emotional development, the difficulties involved in growing up, and his position in the family. The adolescent and his rights, privileges, and responsibilities in the home and to society are studied. Problems of dating, manners, necking, and petting are discussed. In another unit, courtship, the engagement period, and marriage are studied. Parenthood and its responsibilities are given attention. Divorce consideration and its effect on the individual and the children are considered, with some time being spent on studying the trends of modern society that are increasing the divorce rate. Mental health is considered in another unit. The last unit of the course is directed toward the development of social consciousness through the study of many human problems—housing, recreational centers, poverty and its causes and results, immigration, crime, and the problems of the Negro.

WORK EXPERIENCE

During the depression years of the 30's, the National Youth Administration and the Civilian Conservation Corps were formed in an attempt to give to boys and girls needed employment. During this time more and more educators became acquainted with the values which might accrue from work experience. Many educators saw valuable educational experiences in the work programs of NYA and CCC and became convinced that secondary education should accept as one of its functions the provision of work experience for boys and girls. The Second World War made it possible for adolescents to secure employment without much help or direction from the schools. Since the war, however, many school men have attempted to develop, in their schools, work programs which will continue during peacetime years. A recent publication, *Work Experience in Secondary Education,* written by Harold J. Dillon and published by the National Child Labor Committee, has provided educators with an organized presentation on work experience. This publication summarizes the benefits which have been observed by those who are supervising highly successful programs of regularized study and employment which are being carried on by high schools and colleges throughout the country.

VOCATIONAL TRENDS

As secondary schools have attempted to meet the present-day needs of adolescents, the organization by which to provide the most effective teaching has often been discussed. The issue of the comprehensive *versus* the specialized high school has been the subject of many conferences. It now seems rather clear to most educators that vocational education should be for everyone. The critical question is to decide the appropriate years for each individual. For many this will come at the end or near the end of the high school. For others vocational preparation can be postponed until college years. The Research Division of the NEA, released in July of 1946, a résumé of the trends in respect to vocational education. Several trends seem to stand out. The comprehensive high school is favored by educational leaders if it can be administered with fairness to both general and vocational education. Vocational education is for all students, not solely for those who are preparing to enter the professional and technical fields. Vocational guidance should be part of all vocational education. An effective vocational education program needs close association with an advisory committee made up of employers, business and industrial leaders, and public-spirited men and women. More vocational education for adults will be needed in the future than has been given in the past.

THE CORE PROGRAM

It is significant that both the Educational Policies Commission and the National Association of Secondary School Principals have recommended a Core program. Gordon N. MacKenzie (May issue of *The Bulletin of Secondary School Principals* on "Education for Improved Community Life"), briefly describes the Core as having the following characteristics:

> A. It is carefully organized around problems of personal and community living. There is no attempt to follow subject lines such as English or social studies. Instead almost every subject known may at some time or another be drawn upon as pupils work on their problems. Proper handling of problems of personal and community living requires a direct focusing on these matters with the utilization of all possible resources. There is no attempt to fuse or relate the materials from two or more fields. The

organizing center is the problem under consideration and use is made of whatever materials or experiences may be needed.

B. It is allocated ample time, possibly three hours per day in the junior high school and two hours per day in the senior high school. This longer period facilitates the provision of suitable learning conditions, it offers a more flexible working situation, and it makes possible the use of a greater variety of learning experiences. For example, the longer period makes it easier to have much pupil cooperation in planning, a greater use of group activities and projects, and more work in and service to the community as a part of the instructional program.

C. It is the heart of the guidance program and serves as a coordinating center. The Core course replaces the home-room or advisory periods and the Core course teacher takes major responsibility for the guidance of his group. Because of the longer period, teachers have increased opportunity to know their pupils. Also the number of different pupil contacts for a teacher is greatly reduced. The Core course makes it possible to bring guidance and instruction into their proper relationship. The teacher becomes a counselor and carries responsibility for both individual and group guidance. There is great advantage in having as a counselor a staff member who has frequent and continued contact with an individual and thus can aid him in undertaking needed, desired, and significant learning experiences.

D. It is planned cooperatively by staff members, parents, and other lay citizens. Although one teacher is responsible for a particular Core course class group, he should have the assistance of subject specialists as well as those responsible for the various special services enumerated above, such as guidance, health, or remedial programs.

E. Its requirements are stated in terms of outcomes desired rather than ground to be covered. While directions are clearly outlined, and many resources and aids may be provided the teacher, there are no set books to be read.

IMPLICATIONS OF MILITARY EDUCATIONAL PROGRAMS

At the close of the Second World War, the American Council on Education appointed a Commission on Implications of Armed Services Educational Programs, with Alonzo G. Grace, Director, and M. M. Chambers, Assistant Director. Two publications have already been released. They are "Opinions on Gains for American Education from Wartime Armed Services Training" and "Utilizing Human Talent." "Educational Lessons from Wartime Training: The General Report of the Commission," will be released in March 1947. Other significant reports will be published during 1947 and include "Curriculum Implications of Armed Services Educational Programs," and "Audio Visual Aids in the Armed Services."

The conclusions emerging from the work of the Commission should have profound effect upon secondary education. The following statements are illustrative of the generalizations which are being made from the war experiences: (1) clear and specific objectives are essential for effective learning; (2) integrated programs are effective because they are necessarily predicated upon clearly defined objectives; (3) the only valid curriculum is the constantly changing one based on a recognition of needs; (4) change involves additions to, modifications of, and eliminations from the curriculum; (5) realistic learning activities are necessary if attitudes and skills are to function in life activities. "Learning by doing" is essential.

VETERAN GUIDANCE

The guidance of veterans was a major consideration in 1946. The Veterans Administration had by the end of the year established Guidance Centers in major areas of population. The demand for education under the G. I. Bill of Rights, caught the Veterans Administration unprepared. In 1945, payment to institutions and veterans for education lagged four to six months. In the fall of 1946 veterans who began their education in September could be reasonably certain of payment by Dec. 15.

Wide use of courses offered by the United States Armed Forces Institute and the General Educational Development Tests (High School Level) made it possible for most veterans to accelerate high school graduation. By the end of the year, 44 state departments of education recognized the General Educational Development Tests as a basis for granting a high school diploma or equivalent certificate. In using the tests, most state departments of education authorized high schools to accept the recommendation of the American Council on Education to grant a high school diploma to veterans who made a standard score of 35 on each of the five tests or an average standard score of 45. New Jersey, New York, Maine, and Massachusetts did not recognize the tests for diploma granting purposes but did recognize them as a guidance instrument for placement in a high school program.

All states made special provisions to help veterans in completing high school. In states where the General Educational Development Tests were not recognized for diploma granting purposes, elaborate systems of Veterans Evening High Schools and special classes were established. The programs in New York and New Jersey are illustrations.

Many colleges recognized the G.E.D. Tests as a valid basis for admission even though the veteran did not possess a high school diploma. Maryland used the test with civilian students as well as veterans. Studies in Chicago, Ohio, Maryland, and Missouri indicated that students admitted on the basis of the tests made as good records as students who were admitted on the conventional basis. In November, the President of the American Association of Collegiate Registrars advocated wider use of the tests for college admission. The evidence gathered on the use of the tests in 1946 indicates wider use of such methods of evaluating student growth not only with veterans but with civilians as well.

Closely allied to the acceleration of veterans are the studies on acceleration of other high school youth. Reports by Pressey at the Ohio State University show that, in general, school youth who were urged to finish high school in three years could do so without suffering ill effects, if wise guidance were provided.

The term "Guidance Program" of the school has become a fairly well established and meaningful term in educational literature. The term generally refers to those functions of a school which deal with students on a distinctly individual basis.

In Oak Park, Illinois, a group counseling program is being carried on at the eleventh grade level. The students meet with a counselor in groups of 15. They discuss the results of the Kuder Preference Record, American Council Psychological Examination, Iowa Placement Examinations (Mathematical Aptitude Test), Otis Self-Administering Test of Mental Ability, and Iowa Silent Reading Test. In the group conference, each student is given a profile of his test results. After discussion of the test results, students study opportunities in fields of their occupational interests and abilities.

In the Opportunity School at Denver, Col., a counseling analysis sheet has been worked out for each year of the Junior High School. The analysis sheet is made up of questions which guide the counselors in working with the pupils.

In Fargo, N. D. a study was made which compared the home-room plan of organization for guidance purposes and the plan of assigning students to a faculty counselor for guidance. In some respects, the home-room plan was found to be superior to the faculty counselor system.

TEACHING AIDS

The trend toward greater use of audio-visual materials was evident. Evidence furnished by the Military

Services (this has long been maintained by educational leaders) showed that well developed and dynamic visual and auditory aids make a learning experience from 10 per cent to 30 per cent more meaningful.

The Military Surplus materials in this area became available to educational institutions. However, much of the surplus was absorbed by veterans' high schools and by critical shortages created by the "overnight expansion" of the colleges.

Teachers are making greater use of teaching aids made available by Federal departments and agencies. In order to help teachers obtain instructional aids from authentic non-commercial, professional and government sources, a fifth revision has been made in the Office of Education's directory of agencies which furnish materials at a low cost.

Much attention has been focused upon Virginia's audio-visual education program as a result of the $1,112,530 for the purchase at $2 per enrolled pupil of maps, globes, charts, projectors, slides, films, and other audio-visual teaching aids. Additional appropriation was made for production of motion picture films of historical and natural resources of Virginia. The lack of electricity in 2,106 of Virginia's schools was a stumbling block to the widespread use of audio-visual materials. This problem was foreseen and the attack was begun under Governor Darden's Administration, and is rapidly gaining ground.

A comprehensive nationwide survey of the status of audio-visual instruction in city schools is being conducted. A study is being made by the National Education Association Research Division and is nearing completion.

With the promise of definite improvement in the audio equipment of schools in America, radio's proper place in the school is being re-examined. There is a trend toward the recognition that radio is not designed to supplant the teacher nor to serve as a medium for dissemination of information. It is now becoming more accepted as an ideal motivating force and as a medium for the development of attitudes. Many local radio stations are now working closely with school systems in order to provide programs of local interest.

HOME STUDY COURSES

Home study courses or correspondence courses have received status through their use during the war. Legislative action in California to approve credit in high schools for correspondence courses is typical of the trend. A major need will be filled in schools where the demand for a particular course is insufficient to warrant the employment of a teacher.

INTERNATIONAL AND INTERCULTURAL EDUCATION

In London in November 1945 educators and scientists met on behalf of international planning. All of the great nations, except Russia, were represented. The meeting translated into action a statement in the United Nations charter. That statement recommended the promotion of international educational and intercultural cooperation. Russia's failure to send a representative was viewed as related "primarily to the more general political and international situation," than to their disfavor of such a development. The Chinese delegation to the United Nations Conference in San Francisco is credited with initial proposals of international cooperation in education, science, and culture.

According to George D. Stoddard, an American delegate to the London meeting, the committee was able to complete its work in a few weeks because a great deal of groundwork had been done by Allied Ministers in Education meeting intermittently in London for a period of about a year and a half. "The London conference resulted in the creation of UNESCO (United Nations Educational Scientific and Cultural Organization). UNESCO is a specialized agency under the Economic and Social Council of the United Nations. Its permanent seat will be located in Paris. A general conference will be composed of not more than five delegates from each member nation. An executive board of eighteen members will be elected by the General Conference. The Executive Board is expected to show geographical distribution and will be competent in education and in the arts, humanities and sciences. . . . In addition to the Executive Board, a Secretariat will be established with a Director General and Staff."

The organization will bring together three major groups: (1) educators, including teachers, scholars, professors, and persons engaged in other informal aspects of education (educational services of radio, motion pictures, and the press); (2) scientists of the world in every field (there are already 400 societies and agencies having international membership); (3) cultural groups in which special emphasis is placed upon languages, literature, the Arts, and the various means of communication.

The entire constitution of UNESCO and a statement of some of the organization's purposes, appears in (March 1946) *The Bulletin of the National Association of Secondary School Principals.* The United States formally accepted membership on July 30, 1946.

The National Commission on Educational, Scientific and Cultural Cooperation is the link between United States citizens and the American delegation to UNESCO. It is made up of 64 representatives from national organizations representing many phases of American life and 40 representatives from the State Department.

Two international conferences of teachers were held during the year at Endicott, N. Y. and in Switzerland. At Endicott, a World Conference of the teaching profession was held Aug. 17-30. Resulting from the conference, a World Organization of the Profession will be established. Discussion at the conference centered on: (1) worldwide exchange of teachers and students between nations; (2) need for a universal language and more study of languages; (3) common world textbooks; and (4) elimination from the curriculum of extreme nationalism.

The International Conference on Public Education held its ninth session in March 1946. Thirty-six governments accepted the invitation of the Swiss government. The conference was organized by the International Bureau of Education. Two special questions received focal attention, namely equality of opportunity for secondary education and the teaching of hygiene or health education in primary and secondary schools.

HIGHER EDUCATION

By Ralph McDonald

National Education Association of the United States

GENERAL

The colleges and universities of the United States experienced the greatest and most rapid change in their history during 1946. To meet an unprecedented expansion in enrollment, the institutions strained every resource of plant, equipment, faculty, finance, and curriculum. The preeminent problem on practically every campus was to provide for a tremendous influx of students without sacrificing the fundamentals of quality in instruction.

War programs as such had practically all disappeared by the end of the calendar year, but several major war-connected operations continued on a contract basis as permanent features of college and university life. There was increasing evidence of a closer permanent relationship between the Federal Government and higher education, with military purposes preeminent.

By the year's end, the colleges had caught stride with the complex problems incident to post-war adjustments.

Although institutions generally were greatly overtaxed by the quantity of demand in relation to facilities and faculty, higher education had taken on a definite peacetime character, and post-war patterns were emerging.

PENALTIES OF SHORT-SIGHTEDNESS DURING WAR

The cultural retardation of the United States as a result of unwise policies of Selective Service and financial starvation of education had made too deep a mark to be erased readily. College plant and equipment had not only failed to expand normally since 1940, but had suffered further from deterioration and, in some cases, had been depreciated by military use.

Faculties had suffered even more heavily. With higher education being looked upon by the national leadership as merely another instrument of temporary military policy, teaching for the sake of promoting learning was pressured to its lowest ebb in generations. Professors, researchers, instructors, and educational administrators were drawn by the thousands from the institutions to enter military services, government war agencies, war industry, and other occupations.

Educational programs had been militarized on hundreds of campuses, the colleges for women and the small liberal arts colleges retaining their character as free educational institutions better than men's colleges, technological institutions, and universities.

Financial resources of institutions were depleted to the danger point. Public colleges and universities had in general received larger appropriations, but their financial strength had been adversely affected by the failure of other sources of money and by greatly increased costs. Private institutions had been weakened financially by the reduced flow of gifts, by the loss of a large proportion of the tuition income upon which they depended, and by the lower yield of endowment funds, as well as by increased costs.

Thus, the nation faced the post-war period and its heavy demands fully as unprepared for peace as it had been for war. The unpreparedness was clearly owing to the short-range viewpoint of the nation's war-time leadership. Fundamentally, the higher education structure of the United States was relatively weaker at the close of the Second World War than it had been at any time. The weakening had not come from within the colleges; it had been imposed from without. Effects of the enforced weakening of American higher education will be felt for many years.

STUDENT ENROLLMENT

Student enrollment reached an all-time high in the fall of 1946. A survey made by the United States Office of Education revealed a total enrollment of 2,078,095 students in 1,749 institutions in October, 1946 ("Higher Education Enrollment," Statistical Circular, U. S. Office of Education, Nov. 20, 1946, p. 1), as compared with a total enrollment of 952,000 in October, 1945. Enrollment climbed steadily in most institutions throughout the academic year 1945-1946, reaching an estimated 1,150,000 by June 1946. Summer enrollment held to a much higher point than in previous years, with students seeking to make up for time lost during war years.

Peak enrollment for pre-war years had been reached in 1939-1940, when the total was 1,494,203 as officially reported by the United States Office of Education (*Statistics of Higher Education*, 1939-40 and 1941-42, Volume II, Chapter IV, of the Biennial Survey of Education in the United States, p. 11). It is probable that the peak enrollment of full-time students rose to 2,300,000 or above by the end of November 1946, a figure almost 1,000,000 above the highest pre-war total.

There are indications that the total enrollment for spring terms may be slightly less than for fall terms, a normal expectation as indicated by pre-war experience. The upward trend of enrollment has not been broken, however. Registration for the fall of 1947 is expected to go well beyond 2,500,000 if facilities can be expanded to provide for that number. Further increase may be anticipated to a total of at least 3,000,000 to 3,500,000 within the next few years as the higher education structure is adapted, quantitatively and qualitatively, to the increased demand. An estimate of 6,000,000 total enrollment by 1950 has been made by one responsible student of education (C. E. Partch, Dean, School of Education, Rutgers University). Although other authorities consider that estimate too high, it is generally agreed that enrollment for the next several years will increase at a rate considerably beyond the most rapid possible rate of expansion of facilities and faculties. In other words, by 1946 indications, the greatest possible expansion of colleges on a sound and balanced basis for the next three years will still leave the nation falling short of meeting the demand for higher education on the part of the American people.

The increased numbers have altered the distribution of enrollment with respect to sex, educational level, age, kind of program, and type of institution. A very notable change in college population is found in the feature of marital status.

Men students have increased much more rapidly than women, 68 per cent of the students, reported in October 1946, being men, as compared with only 39 per cent in October 1945 ("Higher Education Enrollment," Statistical Circular, U. S. Office of Education, Nov. 20, 1946, p. 9). Veterans of the Second World War accounted for slightly more than half the total registration in 1946-1947, the number rising from approximately 100,000 in January to 425,000 in June, to 1,000,000 in October, and possibly to 1,200,000 by the end of November 1946.

Although classes were larger from the freshman year through the graduate school, greatest increases were at the freshman and sophomore level. Typically, 75 per cent of undergraduate enrollment was found in the lower division. The significance of this distribution was not lost upon university authorities. As the heavy enrollment moves upward to junior, senior, and graduate or professional level, the shortage of faculty and equipment will be much more acute. Freshman and sophomore enrollment is expected to remain high and increase further, but the more severe strain within the next three or four years will be at the upper levels, where the ratio of teachers to students is generally much higher and the amount and variety of equipment per student are considerably greater.

STUDENT DISTRIBUTION

College students in 1946-1947 were two to three years older on the average than pre-war students, because of the return of veterans and other students whose education was interrupted by the war.

Students in 1946-1947, particularly veterans, show decidedly different distribution among the various educational programs from the usual pre-war distribution of students. Engineering, commerce, pre-law and premedicine choices are much greater proportionately. Courses directly vocational in nature generally show heavier relative demand, but unusually restrictive admission to colleges of medicine and dentistry have held down the increase in these fields. The rush of veterans into engineering has been the cause of considerable concern lest an over-supply of engineers result. An authoritative estimate indicates that "the deficit of engineering graduates will have been wiped out by 1952. This means that the need for continuing engineering education at an overload level will lessen beginning with the entering freshman class in 1949" (*Journal of Engineering Education,* September, 1946).

One major field of professional education was in sharp contrast with the general trend. Teacher education programs enrolled more students than during the war years, but the proportion of all students enrolled for such courses was considerably below prewar levels. The enrollment in elementary teacher education was far below the minimum necessary even for normal replacements. Since a deficit of 350,000 teachers exists, in addition to normal replacement requirements, effects of the small relative enrollment for teacher education will be very serious in the life of the nation ("Leaders Letters" No. 59, National Education Association of the United States, Jan. 2, 1947). Teachers colleges reported a total enrollment in October, 1946, almost equal to the pre-war figure ("Higher Education Enrollment," p. 5), but a large percentage of enrollees in these institutions was known to be veterans and other students not planning to teach, who were in the teachers colleges because they could not secure admission elsewhere. The effect of such diverse enrollment threatens to dilute and weaken the quality of teacher education, thus compounding the injury caused by the quantitative decline in teacher supply.

State universities reported large increases in enrollment, with total registration in some cases more than twice the pre-war figure. As compared with 1945 enrollment, all types of institutions showed heavy increase, each classified group doubling its 1945 total enrollment except Negro institutions (*Ibid.*, p. 5). Enrollment at colleges for Negroes was so large in 1945 that facilities were taxed, thus restricting expansion by comparison with other institutions, most of which had less than capacity enrollment in 1945.

MARRIED STUDENTS

The most striking change in college population as compared with pre-war years was in the proportion of married students. It was not unusual in 1946 for 20 or even 30 per cent of the students in a university to be married. In many universities the proportion of married veterans reaches 40 per cent or more. Tens of thousands of these married students brought their families with them, producing a profound change in the social atmosphere of the campuses. The number of children of veterans reached into the hundreds at practically every large state university. University finances, facilities, and ingenuity were taxed to provide the necessary health, education, social, and family welfare services for the unprecedented camp following of families of students.

FACTORS IN FURTHER INCREASE IN ENROLLMENT

The factors pointing to further increase in higher education enrollment are unmistakable: (1) issuance by the Veterans Administration of certificates of entitlement to education to a total of 5,703,826 veterans up to Nov. 30, 1946, of whom it may be assumed that 2,000,000 or more will ultimately seek to enter college; (2) continuation of educational benefits to those inducted into the armed services for more than a year after V-J Day, most of these being young men serving relatively short terms in the Army or Navy, but entitled to educational benefits for a year longer than their respective terms of service; (3) the upward trend in high school graduation; (4) restoration of the pre-war climb in the proportion of high school graduates attending college; (5) gradual reduction in manpower demands of the nation's economic life, especially as youth are affected; (6) increased complexity of modern living, creating a greater demand for the products of higher education; (7) increasing recognition of the value of advanced education, both to the individual and to society.

VETERANS IN THE COLLEGES

In the preceding analysis of higher education enrollment, veterans were shown to constitute a majority of the college and university population. In the main, the veterans enrolled in college in 1946 were persons who would likely have attended college between 1940 and 1946 if the nation had not been at war. There were many (a minority, however) of the veterans in college who would not have been able to attend, as shown by a survey of veterans at George Washington University. Undoubtedly a large percentage of those who would normally have attended college would have found it impossible to do so at the close of the war without the liberal benefits extended by the Federal Government under Public Laws 16 and 346. Payment of tuition charges and student fees by the Veterans Administration, together with subsistence allotments of $65 per month for the veteran without dependents and $90 per month for the veteran with dependents, made it possible for most veterans to attend college if they wished to do so, provided they were qualified.

Heavy registration of veterans at publicly supported colleges and universities imposed much more serious financial burdens upon such institutions because of their relatively low tuition rates. In pre-war practice, the tuition charges of public colleges on the average represented only one-sixth of actual educational cost per student. Thus, the provision for payment by the Veterans Administration of only tuition and student fees meant that such institutions, on the average, needed five dollars additional revenue from some other source to match each dollar provided in Federal funds for the veteran's education. The burden was reduced by regulations permitting the institutions to receive Federal funds on the basis of non-resident fees, or on the basis of a minimum of $15 per month, $45 per quarter, or $60 per semester. Despite these adjustments, public institutions generally received far less Federal funds per student than private institutions to help with the cost of educating veterans.

Veterans merged imperceptibly into student bodies in a gratifying fashion. Reports from colleges throughout the country indicated that veterans in 1946 were equal or superior to other students in their academic achievement and in their adjustments to college life. The more than 1,000,000 veterans on the campuses in 1946-1947 showed little tendency to separate themselves, by veterans' organizations or otherwise, from the other students. The veterans' organizations which existed were almost all local campus groups not connected with the national organizations of veterans or with veterans' groups in other institutions.

STUDENTS WHO FAILED TO GAIN ADMISSION

It is estimated that a minimum of 100,000 students, who planned to attend higher education institutions in 1946, were unable to gain admission. The chief sufferers from the closed college gates were women students and those who graduated from high school in 1946. Hundreds of thousands of students were enrolled in institutions other than those of their choice. Extension centers and emergency colleges drew their registrants chiefly from among those who had failed to gain admission to regular institutions.

SHORTAGE OF FACILITIES

The pre-war establishment for higher education, depleted by the strain of the war years, was quite insufficient to provide for the increased enrollment. Adjustments were made along two lines: more intensive use of existing plant and equipment, and expansion of facilities.

Classes were enlarged in practically all institutions, and daily schedules were extended over more hours in the day, resulting in a considerable increase in the number of students per unit of classroom space. Night classes became commonplace. All available space was used as fully as possible in most institutions.

Facilities were far short of the need, even with maximum use and overcrowding. Wartime controls, shortage of building materials and manpower, and lack of funds made it impossible for colleges to expand their permanent plants materially. In some cases, buildings of various kinds were purchased and converted to college use. For example, Wayne University in Detroit purchased a hotel and several residences. While a few institutions erected dormitories and classroom buildings, and a few others started such construction in 1946, permanent plants on the whole were augmented very little.

With the aid of the Federal Government, temporary buildings were moved to hundreds of campuses, usually from military cantonments or defense centers. Through the Federal Public Housing Authority, temporary housing units for veterans were made available, the total falling somewhat short of a goal of 300,000 units set early in 1946. Use of such temporary units was restricted to veterans, with relaxation of regulations late in the year to permit the use of a limited number by faculty members teaching veterans. From the Army and Navy, there was transferred a substantial amount of housing and equipment to colleges and universities.

In August a law was ratified under which surplus buildings and equipment owned by the Federal Government might be transferred to institutions educating veterans (Mead Bill, Public Law 697). Under that measure the Federal Works Agency approved the transfer of surplus buildings and equipment valued at $56,628,017 to 800 institutions. The needs of the 800 institutions were only partially met, but 527 additional institutions, certified by the United States Office of Education as being entitled to such aid, had received nothing by the end of 1946.

EMERGENCY COLLEGES AND OTHER EXTENSIONS OF FACILITIES

Emergency colleges or temporary branches of existing institutions were established at abandoned military bases or defense centers. Three such emergency colleges were established in New York State, known as Champlain College (Plattsburg), Mohawk College (Utica), and Sampson College (near Geneva). Farragut College in Idaho was likewise established at a former military center. The University of Georgia took over two military bases to be sites for new units of the State University System.

Extension centers were established by the score, usually under the administration of state universities, with full credit being given for the college work offered at such centers.

Many new junior colleges were established, usually in connection with local public school systems.

The total number of colleges and universities included in the survey of college enrollment made by the United States Office of Education increased from 1,679 in 1945 to 1,749 in 1946.

Transfer of surplus government property under the powers granted to the War Assets Administration yielded only a small trickle of equipment to educational institutions.

The end of the year found the great majority of institutions with acute shortages of dormitories, classrooms, library space, laboratory facilities, administrative offices, and practically every kind of building and equipment needed in their educational programs.

STAFF PERSONNEL PROBLEMS

A serious shortage of instructional personnel continued throughout 1946 as one of the major problems of higher education. A large percentage of the faculty members who had entered the military services or other wartime employment did not return to the colleges. The small output of graduate schools during war years was insufficient to provide replacements. The great increase in enrollment made necessary thousands of additional teachers over and beyond the pre-war numbers. The shortage was estimated to be at least 10,000 full-time instructors (Report of Group V, National Conference on the Education of Veterans in Colleges and Universities, April, 1946).

The faculty shortage was further aggravated by low salary schedules throughout the nation. A study of 141 representative institutions revealed that faculty salaries for 1945-1946 were only 17.7 per cent above 1940-1941 levels, on the average (*Trends in Enrollment, Fees and Salaries,* University of Omaha, April, 1946). The increase in Federal taxes, together with increased prices, has reduced the buying power of the average faculty member's salary by 25 per cent or more below pre-war standards.

Adequate replacements and additions to staff on the basis of previous educational requirements were impossible. Thousands of instructors and assistants of very limited graduate training were employed to teach freshmen and sophomores.

The faculty shortage, both quantitative and qualitative, is expected to be much more serious in 1948-1949 when the present freshman and sophomore students have moved up to the junior and senior classes.

PRESIDENT'S COMMISSION ON HIGHER EDUCATION

In May, 1946, a report was made to President Truman by John W. Snyder, then Director of War Mobilization and Reconversion, on The Veteran and Education. On the basis of a study made by a committee of government agency experts, the report presented recommendations for government assistance to help bring about an expansion of facilities.

In July, President Truman announced the appointment of a special Commission on Higher Education, to study the role of higher education in American life and make recommendations. The Commission, composed of 30 men and women, chiefly college and university presidents, met several times in Washington and began its studies with the aid of a staff. A report is expected from the Commission by June, 1947.

COOPERATIVE STUDY AND PLANNING

Several conferences were held at the national level during 1946, in which representatives of higher education came together for voluntary cooperative attack upon their common problems. Particularly notable was the National Conference on the Education of Veterans in Colleges and Universities, held in Chicago in April 1946, at which plans were laid for a nationwide expansion of facilities to provide for the large veteran influx expected in the fall. Many of the actions taken by the Federal Government and by states and institutions grew out of the findings of the Chicago Conference.

Statewide planning was more widespread than ever before. Faced with unprecedented problems, college and university representatives came together increasingly in conferences and committees to plan their programs cooperatively on a statewide basis. In Michigan the numerous state institutions, though independent of each other, planned a joint presentation to the legislature.

RESEARCH

Research activities at the universities continued to lag in fields other than the few sciences in which military subsidies were available. Although data have not been compiled on the matter, it is likely that considerably more than half of the money spent on research at universities during 1946 was obtained through grants from the Army or Navy.

A bill to establish a National Research Foundation and provide subsidies for research under civilian control died in committee in both houses of Congress. Public hearings and committee study in the Senate laid the foundation for such legislation in the 80th Congress.

A measure was passed by Congress establishing a Commission for the domestic control of atomic energy (McMahon Bill, Public Law 585). One of the major features of the bill is a provision for the encouragement and subsidization of research on nuclear fission.

RESERVE OFFICER TRAINING

Both the Army and the Navy extended their permanent reserve officer training units in the colleges and universities. Army training units had been a regular feature in many institutions for many years, but the spread of Naval Reserve Officer Training Corps units was largely a development of the Second World War.

STUDENT COUNSELING

Greater emphasis has been placed upon student guidance and counseling than at any time in the history of American higher education. Despite a crucial shortage of trained personnel, colleges and universities extended considerably their services in this area. Guidance centers, established by contract with the Veterans Administration, augmented the regular facilities on many campuses.

CURRICULUM

Although 1946 brought forth no single study as widely publicized as the

Harvard report on *General Education in a Free Society,* published in 1945, the study of curriculum was widespread. Most of the curriculum planning took place in individual institutions as their courses were studied and revised in relation to post-war conditions and the needs of more mature students.

COLLEGE AND UNIVERSITY FINANCE

Payments made by the Veterans Administration under Public Laws 16 and 346 constituted a major source of revenue for current operations of institutions enrolling veterans. Such payments fell far short of the expense incurred by the colleges and universities in providing educational programs for veterans, however, particularly in the case of publicly supported institutions. The University of Illinois, for example, spent $17.09 per credit hour of training taken by veterans and received only $9.65 of that amount from the Veterans Administration (C. C. DeLong, Bursar).

Current revenue from other sources was insufficient to provide for the operating needs of most institutions. Emergency grants from state governments were helpful in Alabama, New York, and a few other states. In general, however, current operating funds were very inadequate.

One of the effects of inadequate current financial resources was that faculty salaries remained very low. Plans of representative institutions called for only 8.4 per cent average increase in salaries for 1946-1947, over 1945-1946 (*Trends in Enrollment, Fees and Salaries,* University of Omaha, April, 1946).

Many colleges raised tuition rates and student fees in an effort to reduce their financial strain. One survey showed that more than half (75 out of 141) of the institutions reporting had raised tuition rates for 1945-1946 over those of 1940-1941. More than one-third (50 out of 141) were raising their 1946-1947 rates above those for 1945-1946 (*Ibid.*). Increases were less frequent among state universities, teachers colleges and municipal universities; increases were much more frequent among private and endowed institutions. Increases in state institution rates were chiefly in the schedules for non-residents. The influence of Public Law 346, under which Federal payments for veterans' education were measured by tuition, was clearly the chief cause of increased tuition scales. The increase in non-resident fees of state institutions (ranging up to 600 per cent) was due largely to Public Law 346 and an interpretation which permitted payments for resident and non-resident veterans to be made on the basis of non-resident fees.

Even with the yield from increased tuition rates, however, most colleges and universities had less operating funds than they needed to maintain high standards of education and adequate salaries for their staffs. Money for permanent building was available to only ten per cent of the colleges, according to a survey of 458 institutions in May, 1946 (Department of Higher Education, National Education Association).

THE OUTLOOK

Despite their harrassing problems, their acute shortages of housing and equipment, their continuous strain of expansion, their faculty crisis, and their financial distress, the colleges and universities of the United States were foci of a determined but practical sort of optimism. The buoyant hope of two million young Americans looked beyond the strain and stress of post-war adjustment. Judged by the spirit of the campuses, America's look was a forward one in 1946.

EDUCATION FOR THE PROFESSIONS

By George D. Strayer, Jr.*
Associate Professor, School of Education, Indiana University

BUSINESS EDUCATION

Increased Federal Support. — One of the most important developments during 1946 was the signing of the George-Barden Act on Aug. 1. This act increased most of the appropriations formerly provided under the George-Deen Act. Appropriations for agricultural education were increased from $4,000,000 under the George-Deen Act to $10,000,000 under the George-Barden Act. Funds for industrial education and home economics education were doubled, making the latest appropriation $8,000,000 for each. The amount allocated for distributive education is $2,500,000. whereas it was formerly $1,200,000. The funds allocated for Federal administration remain the same; namely, $350,000.

The various states are still required to match by state and local funds 100 per cent of the appropriations made under the Federal Act. A number of new requirements were established concerning the uses which might be made of the Federal funds. The expenditures now authorized include such items as salaries and necessary travel expenses; maintenance of administration, supervision, and teacher training; vocational counselors and supervisors of vocational guidance training programs for apprentices; training and work experience; training programs for out-of-school youth; and research in the administration of vocational education and vocational guidance. One of the important changes is that persons over 18 years of age who have left full-time schools are now permitted to engage in courses in session less than 30 hours per week and less than nine months per year. These same individuals may also engage in shop work without fulfilling the former requirement that a minimum of 50 per cent of the time should be given to shop work on a useful or productive basis.

Publication of Research Studies.—Delta Pi Epsilon has conducted a competition since 1940 to encourage research in the field of Business Education, and each year it has published the winning study. Another development that tends both to encourage research and to make the results available for use is the publication once a year of a research issue of the *Review of Business Education,* which is a bulletin of the Oklahoma Agricultural and Mechanical College at Stillwater, Okla. Two issues have appeared—one in 1945 and one in 1946.

Organizations.—Since 1944 a joint handbook has been published by the Eastern Commercial Teachers Association and the National Business Teachers Association. This joint publication is one indication of the movement in Business Education for closer cooperation between existing organizations. Another move in this direction was the recent establishment of the United Business Education Association which is affiliated with the National Education Association. This new organization is a consolidation of the former National Council for Business Education and Business Education Department of the National Education Association. Both of these organizations have transferred their interests and programs to the United Business Education Association.

The Vocational Division of the U. S. Office of Education has published pamphlets and bulletins from time to time of value to those working in the Business Education field, and is now publishing bibliographies and bulletins under the Business Education Service Program.

---

* The writer is indebted to Dr. Gould Wickey, Executive Secretary of the American Association of Theological Schools, for a statement which is the basis for the section on Theological Education.

Veterans.—In many studies which have been made of career preferences of veterans, it has been found that one of the most popular choices has been business. Despite the fact that many of the veterans have enrolled in undergraduate liberal arts programs, many of them are still planning to enter the field of business. Schools of business administration in many senior colleges and universities reported that they had a larger percentage increase in enrollments during 1946 than other divisions of the college or university. The apprenticeship or on-the-job training program has been selected by some veterans who felt that they could learn more in that way, or who desired to speed up their acquisition of knowledge and skills. Insurance companies are an example of one business that has cooperated with the returning veterans in providing this type of training.

Opportunities.—Owing to the fact that the number of business and clerical employees of the Federal Government has not decreased markedly, and owing to the increased production in many industrial enterprises, there has been a steady demand for those with business education backgrounds, and no immediate slackening in the demand is apparent.

The expanded enrollments of many schools of business in colleges and universities and separate business schools is indicative of the fact that every effort is being made to supply trained workers. Some of the areas in which business education may function during 1947 are in pre-induction training for military service, business education in the Army, Navy or Marine Corps, and in the training of both enlisted and officer personnel in the Naval Reserve program.

Programs and Courses. — New courses have been organized at some higher educational institutions for the study of such problems as airport management, air transportation, or secretarial duties in aviation, medicine, law, and government. Additional courses have been established dealing with personnel administration, retailing, insurance, and real estate.

The short-course business programs may be illustrated by the following list of some of those offered by the School of Business of Indiana University during 1946: two weeks course for savings and loan officers, four weeks conference on fire and casualty insurance, two weeks lecture and discussion for insurance investment officers, and a seminar for executive secretaries of commercial and trade associations.

One of the most interesting cooperative undertakings was the continuance in California and the extension in Washington of the Business Planning Institute which brings together representatives of educational, business, civic, and service organizations for discussion and planning. This Institute was initiated and developed by the Bureau of Business Education of the California State Department of Education.

ENGINEERING EDUCATION

Enrollments.—The May 1946 issue of *The Journal of Engineering Education* reported that the enrollments for the school year 1945-1946 represented a 76 per cent increase over the enrollments in the school year 1944-1945 but that the totals were 36 per cent less than the peak enrollments which were achieved in the school year 1941-1942. There is every indication that the need for trained engineers will probably be greater than the supply during the next four or five years. The low enrollments of recent years and the increased vocational opportunities for persons with engineering training are possible reasons for this situation.

Humanistic-Social Studies. — Robert M. Boarts and John C. Hodges prepared a report which was published in *The Journal of Engineering Education* concerning the characteristics of humanistic-social studies as offered in connection with the program of engineering education. They studied the programs at the Carnegie Institute of Technology, Case School of Applied Science, Columbia University, Cooper Union, Massachusetts Institute of Technology, Michigan

State College, Polytechnic Institute of Brooklyn, and Purdue University. They found that there was only one instance in the institutions which they visited where the engineering faculty had determined the course offered by the humanistic-social staff. They further stated that the course which was developed under these conditions was not considered to be particularly desirable by either the engineers or the humanistic-social staff.

Some of the institutions which the authors visited agreed that social consciousness was a desirable objective for engineering education, and in these colleges the study of history as a social science was considered desirable. Various plans were found in the different institutions mentioned above with one of the more elaborate plans found at Carnegie Institute of Technology where a committee of liberal arts, science, and engineering personnel was in action to work out solutions to differences of opinion and to keep the courses offered in line with the objectives. Plans at Columbia University and Michigan State College include humanistic-social studies in the pre-engineering plan and one required course in the junior year. At Massachusetts Institute of Technology a course is offered entitled United States and World History. Purdue University stresses English composition, and the Polytechnic Institute of Brooklyn insists upon a very comprehensive program of English instruction. One of the most significant statements made by the authors was that "Technical education can best be liberalized by encouraging individual faculty members to achieve a broad and liberal viewpoint and to reflect that viewpoint in their teaching."

Measurement and Guidance Project.—K. W. Vaughn, the director of the project, reported during 1946 concerning the progress to date and the plans for the future. The freshman entrance examinations, which have been called a pre-engineering inventory, were revised for the third time in the summer of 1944, and so far they have been given to a total of 35,000 individuals. The sophomore achievement tests for engineering students are now in experimental form and will be administered on a nationwide basis for the first time in February or March, 1947. The pre-engineering inventory is used as a general estimate of the probability of the student succeeding in the engineering course, while the sophomore achievement tests have been prepared to evaluate the possible success of the individual in the further study of engineering.

Effective Teaching.—Engineers, in common with many other professional persons, have found that one of the basic problems in the improvement of education for the professions is that of improving teaching. Many requests for such assistance have been received by various engineering groups, and a committee of the engineering faculty of Virginia Polytechnic Institute prepared a bulletin entitled *Effective Teaching* which was issued as Engineering Extension Bulletin No. 42. This bulletin has had a wide distribution and has been mentioned by the American Society for Engineering Education as a desirable source of information concerning teaching techniques.

Some of the engineering educators who left their teaching positions during the recent war to engage in various types of war work have been encouraged by the higher salaries paid by industry and by research laboratories to continue their work for government or industry and to decide not to return to their teaching duties. This fact is mentioned in *The Journal of Engineering Education* as one of the problems which is faced by the engineering schools in attempting to carry on their programs with increased enrollments.

LEGAL EDUCATION

Law Schools.—The law school enrollments in the United States for the fall semester of 1946 increased greatly over the previous fall semester and exceeded even the enrollments in the fall of 1937.

Northeastern University School of Law at Boston, Massachusetts, was admitted to membership in 1945, and the law schools of Willamette University at Salem, Ore., University of Connecticut at Hartford, University of Miami at Coral Gables, Fla., St. Johns University at Brooklyn, N. Y., Detroit College of Law, and Wayne University Law School were admitted to membership in December, 1946.

One of the most important developments during the year which may have great influence upon the profession as well as upon legal education is the launching of a three-year study entitled American Bar Association Survey of the Legal Profession and Legal Education. One hundred thousand dollars has been appropriated by the Carnegie Corporation, and the study will be under the auspices of the American Bar Association which has agreed to spend $50,000 on the project.

Continuing Education. — The American Bar Association has assumed the responsibility for organizing both post-graduate legal education as offered through law schools and institutes and also other types of continuing education made possible by correspondence courses or refresher courses. Some of this work will be carried on by the Practising Law Institute which is located in New York City, but many of the continuing education programs will be offered in connection with law schools in various parts of the United States.

Teaching and Examination Methods.—The Committee on Teaching and Examination Methods in its latest report emphasizes the desirability of making more use of objective type questions and in its 1945 report gave examples of such questions in 15 printed pages. The Committee raised several fundamental questions in connection with existing teaching methods, such as the usefulness of text materials for law teaching to supplement the existing case books. The members also recommended that the 1947 meeting of the Association of Law Schools consider some of the problems related to teaching methods in a general session. The report further suggests that some of the materials which have been prepared for teaching purposes have actually been written primarily for other law teachers and lawyers rather than for students.

The Curriculum.—The Committee on Curriculum has considered various possibilities in studying the scope and sequence of pre-legal and law study. Consideration of the contributions which might be made by the social disciplines has stimulated practical suggestions, and proposals for 2-4, 2-2-2, and 3-4 plans have been made in the attempt to create a more desirable division of the liberal arts and law school programs. The University of Denver has adopted the 2-2-2 course of study and plans to follow the idea advanced by Prof. Jerome Hall of Indiana University of including both law and social science courses in the last two years of the six-year program following two years of law courses exclusively.

Some of the approved law schools are increasing the law curriculum from three years to four years whereas other law schools have taken a definite stand in favor of continuing a three-year curriculum. Other trends in the curricula of member schools are an increase in the number of courses offered, increased emphasis on public law, inclusion of the summer session as part of the regular school year, and reduction or elimination of electives. Additional light may be thrown on these problems by the survey of the profession by the Carnegie Corporation and the American Bar Association, and by a survey of law practice and law study which is being made by the Harvard Law School.

MEDICAL EDUCATION

Reconversion of the Accelerated Program.—The medical schools have made plans for annual admissions in the fall of each year, in the majority of cases. Tennessee plans to admit students quarterly, and Louisville, Minnesota, and Marquette state that they will continue to admit students more frequently than once a year. In addition to admitting classes annually, almost all of the schools are decelerating so that students will complete their work in four years rather than following the three-year war program.

The estimated number of graduates from June 1, 1946 to June 30, 1947 is 6,544. Owing to the gradual dropping of the accelerated program, some students will graduate every month from June, 1946 to June, 1947 with the exception of August, 1946.

From July 1, 1942 to June 30, 1945, there were 20,662 graduates, and 5,826 graduates were reported in the summer of 1946. The additional 6,544 mentioned above indicates that there will be a total of 33,032 graduates during the five-year period begun July 1, 1942. The preceding five pre-war years produced 25,818 graduates. The accelerated program was therefore successful in training 7,214 more physicians than would have been trained if the regular program had been followed.

Medical Schools.—All of the basic schools of medical science except Dartmouth are considering expanding to a full four-year program. Laws have already been passed in Mississippi, North Carolina, North Dakota, and South Dakota authorizing this expansion.

Several states have studied the possibility of establishing entirely new medical schools, and two schools are in the process of development. One is the new medical school at the University of Washington in Seattle, and the other the medical school being established in Los Angeles as part of the Los Angeles Division of the University of California. The Aug. 17, 1946 issue of the *Journal of the American Medical Association* lists statements dealing with the problem of the establishment of entirely new medical schools. These statements include consideration of the cost, which is said to be greater than for any other form of higher education, and the possibility of interested individuals entering medical school. It is pointed out that the distribution of physicians in the various states is more closely related to per capita income of the particular state than it is to the presence or absence of a medical school within the state.

Preliminary Education. — During the war many of the medical schools reduced their pre-medical requirements. The present trend is toward the reestablishment of the pre-war requirements, and 67 of the 87 schools now require three or more years of pre-medical work.

Medical Licensure. — During the year 1945 the medical examining boards of 48 states, District of Columbia, Alaska, Hawaii, Puerto Rico, and Virgin Islands issued 9,153 licenses to practice medicine and surgery. Of these licenses, 5,541 were issued upon the basis of the examination results and 3,612 were issued on the basis of reciprocity and endorsement of other state licenses or by certification of the National Board of Medical Examiners.

The greatest number of graduates examined from any one school was 228, all of whom had attended Indiana University School of Medicine. Of these, 213 were examined in Indiana, and 15 were examined in seven other states. It is interesting to note that only one of these 228 individuals failed in the examinations. Twenty-seven approved schools in the United States had no failures before medical licensing boards whereas nine schools had ten per cent or more failures in state examinations.

Some kind of reciprocal relationship in medical licensure has been established in 44 states, District of Columbia, and Puerto Rico. Florida, Idaho, Massachusetts, Rhode Island, and Hawaii have not agreed to any reciprocal arrangements as far as medical licensure is concerned. However, all of these areas except Florida will grant registration to those who have been approved by the National Board of Medical Examiners.

Internship.—There has been very little change in recent years in the number of schools and medical boards requiring internships for the M.D. degree and for licensure. According to the *Journal of the American Medical Association,* six schools in the United States and four in Canada now require an internship for graduation. Twenty-three state medical licensing boards have this as one of their requirements for licensure. It is also required by the boards in the District of Columbia, Alaska, Canal Zone, Hawaii, and Puerto Rico.

The most frequently used list of approved internships is the one compiled by the Council on Medical Education and Hospitals of the American Medical Association. In a few instances medical schools or licensing boards have established a special list of the hospitals which they consider acceptable for the training of interns.

New Developments in Medical Education. — The War Department has recently approved the loan of medical motion picture films produced by the Surgeon-General to medical groups, individual physicians, or medical schools. The films are available only to members of the medical profession and for non-profit showings.

NURSING EDUCATION

Education and Personnel. — On Jan. 1, 1946, the total enrollment in the state-accredited schools of nursing was 128,826. While this is not a low enrollment in comparison with some of the previous years it is still not sufficient to prepare the number of individuals needed to meet the increased demands for nursing services which have come about in recent years. It is believed that the increased demand for hospital nurses and the need in many communities for increased hospital facilities has been owing in part to the Blue Cross and similar plans of hospital insurance. Many persons paying these insurance premiums seek hospitalization whenever there is a real need, while individuals prior to participation in insurance sometimes postponed medical treatment or received it at home.

Shortages of hospital nurses is thought to be caused to a considerable extent by the high salaries paid by the Veterans Administration and other branches of the Federal service. Some of the nurses who served with the armed forces accepted positions with the Veterans Administration rather than return to hospital work or private practice.

Current Trends in Approved Schools of Nursing. — One of the most interesting developments in schools of nursing has been the increased emphasis placed upon health teaching and public health problems. This has come about through the introduction of new teaching units and also through the addition of topics in these fields by the reorganization of courses.

In many instances advanced professional programs are being established at universities with hospitals, public health agencies, and other necessary community agencies serving as experience or practice areas. During recent years, several experimental projects have been carried on through the cooperation of universities and community organizations. The Association of Collegiate Schools of Nursing and the National Organization for Public Health Nursing have aided in the development of university programs for the training of professional nurses through their committees on evaluation. The publication by the National League of Nursing Education of the volume entitled *Guidance Programs for Schools of Nursing in 1946* will be of real assistance to some of the nursing schools now in process of improving their programs in the field of guidance. The N. L. N. E. also published during 1946 a bulletin entitled "Faculty Positions in Schools of Nursing and How to Prepare for Them." This will undoubtedly serve the dual purpose of aiding the thinking and planning of those interested in qualifying for such positions and in time help the institutions themselves to select from a group of individuals with desirable training and experience for the nursing education field. This publication will also be valuable for use by faculties of nursing schools for self-improvement purposes and for institutions engaged in the education of future nursing school faculty members.

Report on the Structure of Or-

ganized Nursing.—The October, 1946 issue of the *American Journal of Nursing* included a very important statement concerning the study which is being made by Raymond Rich Associates for the Joint Study Committee of the six national nursing organizations. Although the study has not been completed and there is considerable difference of opinion concerning the recommendations to date regarding it, progress has been made in considering the objectives of the nursing profession and the best means of gaining united support for furthering the major purposes finally agreed upon. Many of the present problems of accreditation, social and economic welfare of nurses, and provision of an adequate and well qualified nursing service will be solved or more nearly solved as a national program is developed and adopted for insuring the cooperation of all of those engaged in nursing.

National League of Nursing Education.—The list of schools of nursing meeting minimum requirements as established by the various states was not available at the time this statement was prepared. However, the list which is published each year is exceedingly detailed and can be obtained from the N. L. N. E. for $4.50. The type of information which is included may be indicated by the fact that such matters as the control of each school, entrance requirements, tuition and other expenses, the number of professional graduate nurses serving as staff members, and the length of the program are all a part of the printed table. The schools are listed by states, and the hospital, university, or college with which each school is connected is named.

EDUCATION FOR PUBLIC ADMINISTRATION

Public Administration Clearing House. — The Public Administration Clearing House in Chicago has taken over the work of the Committee on Public Administration of the Social Science Research Council, and the list of colleges and universities offering programs of training is now published by this organization. The latest list was published in September 1946, and follows the same pattern used in previous years.

Curriculum Trends. — The trends in training may be illustrated to best advantage by a summary of some of the developments in certain universities. The training program at the University of Wisconsin is under the leadership of the Department of Political Science, and although few courses in public administration are offered, the administrative point of view is stressed in many courses. According to latest reports, about 100 students are majoring in public administration. A further development in Wisconsin has been the expansion of the Extension Division of the University with plans for offering political science courses in about 20 Extension Centers. This may serve to help local governmental personnel, as many of the instructors expect to provide services on a consultation basis.

The University of Minnesota has made two recent changes in its training program which has been in operation for ten years. The former thesis requirement for the master's degree in Public Administration is now optional, and a student may spend an additional quarter in course work instead. Internships have also been placed on an optional basis. No change has been made in the number of students, as the program is still limited to 18.

Two new courses have been announced at the University of Illinois. One is an undergraduate course in personnel administration and the other is a graduate course in international administration. The Political Science Department is not satisfied with the present plan of course offerings and is interested in developing some type of institutional organization to centralize interest in public administration training.

A new program leading to a master's degree in Public Service Engineering is being planned at the Illinois Institute of Technology. This Institute offers a bachelor of science degree in Public Service at the present time.

The Institute of Public Administration, which has been established at the University of Michigan limits enrollment each year to from 12 to 18 students having an interest in Public Administration. These individuals are encouraged to specialize in some field, such as engineering, economics, forestry, or public health. Internships are arranged in the Bureau of Public Administration of the University in city or other governmental units in the state or in the Michigan Municipal League.

About 50 per cent of the Political Science students at the University of Chicago, inclusive of those in Industrial Relations, are enrolled in the Public Administration program. Some of the students receive joint degrees from the School of Social Service Administration and the Industrial Relations Center. The new four-year college has made possible a three-year program for departmental master's degrees.

An internship is required for the master's degree at Ohio State University, and all Public Administration students must enroll in two basic courses concerned with the staff and functional aspects of administration. Field work is arranged in connection with the various governmental offices in the state capitol where the University is located. A new graduate course in Comparative Public Administration is being offered for the first time this year, and plans have been made for publication of a series of monographs. Both the Political Science Department and the Law School are interested in bringing about the organization of an Institute of Public Affairs.

TEACHER EDUCATION

Recruiting.—The most widely discussed problem in Teacher Education during 1946 was ways to recruit additional personnel for training and for service as teachers. The critical situation throughout the United States. which has necessitated employing thousands of teachers holding temporary certificates, has been caused by decreased enrollments in teacher training courses during recent years and individuals leaving the teaching profession to engage in more remunerative occupations.

Commission on Teacher Education.—The work of the Commission on Teacher Education, which has published its final report, is now being carried on by the Council on Cooperation in Teacher Education. The Commission, in a volume entitled *The Improvement of Teacher Education* suggested that there were five factors which should be given careful consideration in the light of the present shortage of qualified teachers. First, the average salary provided in 1944 was less than $1,800, and second, some states are apparently unable financially to raise teachers' salaries to a level which will compete with other occupations. The Commission also points to the need for occupational security which may be brought about by tenure legislation and the desirability of sick-leave and a reasonable pension system. It is further suggested that the right to live a normal life is desired to such an extent that some individuals refuse to consider teaching, and others may switch to other occupations, even though they have received the necessary certificate. Democratic administrative leadership is considered by the members of the Commission as of utmost importance if teachers are to make the best use of their preparation and experience. It is suggested that few teachers will do a good job in an atmosphere of suspicion, tyranny, or disdain. The profession may be made more attractive and teachers may feel better satisfied if an in-service program of Teacher Education is organized in such a way that teachers will actually learn how to become more proficient. The Commission points out many other important areas for consideration such as more student participation in the planning of their own educational experiences; more satisfactory pre-service education of teachers; more financial aid for first-rate students; and greater institutional unity in programs of higher education.

Despite the generally pessimistic outlook as reflected by articles in both lay and professional magazines, several encouraging developments have taken place in addition to the splendid recommendations of the Commission on Teacher Education. In November 1946, California voters passed an amendment to the constitution which provided, among other things, a minimum salary of $2,400 for all teachers. They also voted for a provision whereby public education is guaranteed priority in regard to all state revenues. The profession of teaching also made real gains in Michigan, Oklahoma, Oregon, and Utah on election day as measures were passed in those states increasing or improving the support for public schools.

Despite the fact that enrollments in many colleges and universities have doubled in comparison with enrollments of two years ago, there has not been a corresponding increase in the enrollments in teacher training institutions and in educational courses. The present demand for consumer goods of all kinds has undoubtedly influenced veterans and others in turning to business or industry as a career. In all probability, the first business recession will find many individuals formerly engaged in teaching, and some who have never engaged in the profession, seeking opportunities in the field. The immediate situation has been made even more difficult by the fact that elementary school enrollments are increasing in many communities, while the supply of trained teachers has diminished.

Understanding World Problems.—Many of the national meetings held during 1946 were concerned with methods of improving teacher training. In addition to the usual recommendations for changes in curriculum methods, materials, and points of view, there was also considerable discussion of inter-group relations and teaching an understanding of world problems. A college study conducted at Wayne University, Detroit carefully considered plans for solving problems of race, creed, national origins, and social class. The United Nations Educational, Scientific, and Cultural Organization has been widely publicized as the international agency through which individuals and organizations can work to develop mutual knowledge and understanding, and a sense of world unity. Although no single meeting has been devoted entirely to discussion of the problems which have arisen in connection with organized labor, problems in this area have been discussed and suggestions have been made concerning what teachers can do to increase understanding in this area and help in the ultimate solution of some of the basic issues.

American Association of Teachers Colleges.—The American Association of Teachers Colleges is conducting a comprehensive study of the student teaching practices in normal schools, teachers colleges, and selected arts colleges. When this study has been completed, it will serve as a valuable guide for use in improving this aspect of teacher education. The list of accredited institutions effective until March 1, 1947 was published in the *Twenty-fifth Yearbook* of the American Association of Teachers Colleges, and four institutions were added to the list which were not on the list during the previous year. The analysis made of the 1945 annual reports indicated that 37 institutions did not meet the minimum requirements of one or more of the standards of the Association. The Sloan Foundation Studies in Applied Economics are being carried on in certain teacher training institutions as well as in some public school situations. The efforts of the Foundation to improve economic conditions in certain areas through the selection of teaching materials, especially on the elementary school level, are being continued, and the Foundation is working with the Standards Committee of the American Association of Teachers Colleges in seeking to gain wide acceptance and utilization of certain basic economic ideas.

THEOLOGICAL EDUCATION

Enrollments.—Sixty-eight schools reported a total enrollment of 6,090 in September, 1946, an increase of 10.8 per cent over the enrollment of September, 1945. An increase of 21 per cent was reported for students studying for degrees beyond the B.D., while the increase in the percentage of students studying for the B.D. degree was only 6.4 per cent. Many of the graduate students served as chaplains in the armed forces and are now taking advanced work with tuition and subsistence paid by the Federal Government.

Accredited Schools.—The total number of accredited theological schools in 1946 was 69. The American Association of Theological Schools accredited seven institutions during the biennium 1944-1946. In order to assist the accredited schools in maintaining standards, the Association plans to make reviews of the accredited schools in programs of advanced degrees 1946 to 1948, libraries 1948 to 1950, faculties and students 1950 to 1952.

Standards in Theological Seminaries.—The present entrance requirements for seminaries include in most cases graduation from a four-year college or its equivalent, but a few of them admit students from the sophomore classes of liberal arts colleges on examination and state that the outstanding students chosen are qualified to do the work in the professional school. Some of the seminaries administer examinations to entering students in order to determine strengths and weaknesses of each student and make provision for special attention where the need is indicated. The American Association of Theological Schools has established two classes of accredited schools. Class A includes all institutions which fully meet the standards of the Association, and Class B is for those institutions which do not require "for admission to candidacy for degree the degree of A.B. based upon four years of work beyond secondary education in a college which is approved by one of the regional accrediting bodies or the equivalent of such a degree," but meet the standards of the Association in all other matters.

One trend is to increase the number of required subjects, and 25 per cent of the 62 schools reporting indicated that they had taken this action. At the same time, 12 per cent of the schools indicated that they had decreased the total number of required courses. Another trend is an increase in the number of theological professors in all denominations who have received the Doctor's degree upon completion of graduate work.

Curriculum Changes.—Some of the theological schools have organized "refresher" courses for chaplains who served in the armed forces. An increased number of the accredited schools are offering some instruction in radio. In 20 schools radio is taught as a part of a course in speech, journalism, practical theology, or religious education, while nine of the schools offer radio courses and three offer courses through colleges or universities with which they are affiliated.

Many of the schools now provide special training in counseling in recognition of the growing importance of that field as part of the life work of ministers. Field Work or a Clinical Year has become a part of the program of more theological seminaries. Sometimes the Clinical Year is the third year of the course, and in these cases the fourth year is organized to include seminar courses for the discussion of problems encountered during the Clinical Year.

The responsibility to develop the devotional life of seminary students rather than to depend upon the initiative of the students in this regard has been assumed by the seminaries in many instances, according to the findings of a recent study.

Recruiting for the Ministry.—The General Commission of Army and Navy Chaplains cooperated with the American Association of Theological Schools during biennium 1944-1946 in preparing and distributing 5,000 copies of a folder entitled "Have You a Man for the Vacant Pulpit?" "The Calling of the Protestant Clergyman" is the title of a brief occupational description which was published by the National Roster of Scientific and Specialized Personnel. The Federal Council of the Churches of Christ in America established Oct. 1, 1945 the Commission on the Ministry, and this Commission published 18,000 copies of a six-page leaflet called "Possibly the Ministry?" Chaplains aided in encouraging individuals to consider becoming ministers and during an eight month period obtained the names of 3,979 service men who were seriously considering the ministry as their life work. During the school year 1946-1947, area conferences will be held concerning church vocations and interdenominational approaches to independent college campuses. The commission on the ministry referred to above also planned three volumes of approximately 100 pages each under the general title of Ministry for Tomorrow with the titles for the three parts *Serve This Ministry, Look at the Ministry,* and *A Young Man's Viewpoint of the Ministry.*

TRAINING FOR SOCIAL WORK

Schools.—The American Association of Schools of Social Work issued a new list of member schools in February 1946. This list includes all of the graduate institutions offering graduate professional study. Some of the 47 schools included offer a standard one-year curriculum, while other schools offer a two-year curriculum leading to a Master's degree. A few of the schools listed also have organized a specialized program approved by the American Association of Medical Social Workers or one approved by the American Association of Psychiatric Social Workers. The list indicates that the University of Illinois' curriculum in Social Welfare Administration was approved for the first time in 1946.

The professional curriculum in all of the member schools is based upon a prerequisite of four years of undergraduate liberal arts study. The schools maintain approved programs of field work, and their faculties must meet certain professional and academic standards. The increased demand for social workers in recent years has encouraged an increase in the number of colleges and universities with organized training programs for social work.

Curriculum Trends.—While there have been no recent changes in the objectives of the professional education, they have been continually restated both for the sake of clarity and also to insure that they reflect current practice. Most of the recent developments grow out of the adoption of a new basic curriculum which took place in May, 1944. The eight basic subject matter areas included in this curriculum are social welfare administration, social case work, social group work, community organization, social research, medical information, public welfare, and psychiatry. The American Association of Schools of Social Work established a Curriculum Planning Committee to continue to define and implement the curriculum adopted in 1944. This Committee has been faced with the need of establishing norms for individual schools as the field of social work continues to expand. Whereas there is no desire to limit all schools to a standardized program, it is felt that there is a danger of the curriculum becoming so comprehensive and so diverse that real professional training might be sacrificed.

The Committee is attempting to devise two educational programs—one for the student who is preparing as a "social work specialist," and the other for the student who is looking forward to working as a "social work generalist." Naturally, it has been necessary for the two committees which have been appointed to think through desirable prerequisite courses on the undergraduate level as well as to study the possibilities of offerings in the graduate curriculum. One possibility being considered by both of the committees is the content which may be included if a third year of graduate study is added and also the possibilities of establishing requirements which would lead to a Ph.D. degree in Social Work.

Demand for Social Workers.—The

greatly increased demand for social workers, which began with the entrance of the United States into the Second World War, has continued partly owing to expanded services offered by cities, states, and the Federal government. It has been necessary to waive professional standards in many cases in order to secure sufficient personnel to carry on the work. Whether the number of social work positions will continue to increase during the next year may well depend upon general business conditions and the demands on the tax dollar by other public services.

ADULT EDUCATION

By J. O. Keller and H. G. Pyle
The Pennsylvania State College

GENERAL

The post-war period has seen programs for the formal education of adults developed on an immense scale under the stimulation of Public Laws 16 and 346, providing for veterans' education. However, while this vast program is an adult education program, it will not be described herein in so far as it pertains to full-time in-school education. This statement will concern itself only with out-of-school adults, those for whom adult educational programs are supplementary to their daily occupation or profession. Veterans returning to full-time study were resuming an interrupted full-time preparation for a career.

Conditions reveal a variety of needs for expansion of adult education programs of innumerable agencies in the field. Paramount is that of establishing international understanding on a basis which can bring a durable peace. It is obvious that such understanding does not come solely through councils of foreign ministers of the big powers; in fact, it may be least likely to appear for this reason alone. The cause can be advanced most significantly when the peoples of all nations have the opportunity for free discussion of the problems which tend to generate international conflict. For example, once there is popular understanding of the benefits of broad international trade and of the rights of small nations to have free access to raw materials, the more difficult it will become for a special interest group to press through legislation to the contrary. Adult education projects bring enlightenment and arouse interest in problems of national welfare. Such projects tend to bring forward leadership, aroused because of interest generated. On the community level the same principle governs. Local discussion of community problems tends to bring informed action.

Problems in all of these areas have highlighted needs for adult study. Nationally we have had reconversion problems incident to the return of our service personnel; of fiscal problems of a government returning to a peacetime basis; of national housing; and of industry with a working force tired from the war production effort and ready to scrap with management. It is the business of adult education to bring public understanding, for to the extent that public understanding is lacking, so also do democratic processes fail to function. Communities are entering into studies of their affairs hoping to plan for their people better centers in which to live. These are some of the areas to which adult education projects have addressed themselves in the post-war period. The war itself has been a costly lesson in adult education; slowly we are again learning that individuals, regardless of their station in life, do have certain inalienable rights.

Possibly the best overview of trends and interests in adult education in 1946 can be obtained from the program content of the Joint National Conference on Adult Education in Detroit in April, the first major meeting of its kind held. It was sponsored by the American Association of Adult Education, the Department of Adult Education of the National Education Association, Adult Education Board of the American Library Association, Educational Film Library Association, and National University Extension Association. Discussion centered around topics such as these: family life education, community group tensions, workers' education, education for veterans, leadership training, radio and television in adult education, community adult schools, adult education in rural areas, adult education and social change, and education's responsibility in major economic conflicts.

Another adult education conference of significance was one called at West Point by the Department of Adult Education (NEA) for state directors of adult education. It sought to emphasize the obligations of the public school system for adult education programs.

REGIONAL, STATE, AND LOCAL COUNCILS

Local, state, and regional councils of adult education continue to increase in number and activity. Councils dormant during the war are being reorganized. The Boston Center of Adult Education offered around 40 informal courses for adults in its summer session, featuring language courses and others. A fourth Southwest three-day regional conference on adult education was held at the University of Texas. It drew an attendance of 200 persons interested in such topics as training for business, industry and the public service, veterans' education, and home and family life. Similar conferences of state associations were held in several other states.

The New York State Citizens' Council held a three-day meeting in February 1946 to discuss housing, economics, and domestic problems and inter-group relations as they affect the community. At Saratoga Springs, a fourth annual State Citizens' Conference of the State Citizens' Council attended by 300 persons considered "The Community We Want." The New York state education department sponsors the state Community Service Council, an organization of young adults 18-30 years of age, functioning in 60 communities for the betterment of these local areas. The adult education councils of Denver, Cincinnati, and elsewhere continued to publicize adult education classes and events. The Springfield (Mass.) Adult Education Council provided 180 speakers to some 75 organizations in a brief period.

Cleveland's Adult Education Committee held an adult education institute and sponsored educational events for recent immigrants. In New York the second annual two-week institute of community leadership was held at Syracuse University. The Michigan council on adult education at its annual session passed a resolution calling on colleges to give maximum assistance in the preparation of teachers and leaders in adult education and urged public school officials to move forward more vigorously in the areas of social-civic education and home and family living. Provisions for use of the Bruce Fund for adult education were also discussed. Two outstanding projects were developed by the New York City Council. Discussion groups, in which the Council supplied trained leaders over a period of eight weeks, were held in 30 cooperating organizations. A second dealt with the development of personnel, volunteer as well as professional, for adult education organized jointly with the school of education of City College. Largely through efforts of the Council, 50 full-time adult teaching positions have been instituted by the Board of Education.

Outstanding activities of the Council of Greater St. Louis include a state equivalence high school certificate project; a survey of educational opportunities for veterans; a directory of programs, classes, and courses; and a survey of opportunities for vocational interests of adults.

LIBRARIES, MUSEUMS, AND PARKS

Libraries, museums, and parks contributed greatly to development of the adult education movement. Newark (N. J.) Public Library used special scholarship funds to provide a course in discussion group leadership for employees of its staff. In Charleston (S. C.) the County Free Library continued its interesting program of discussions on current events for members of that community. A branch of the New York Public Library, in cooperation with a television firm, planned a television institute designed to orient potential members of the new industry in the elements of writing, programming, and presenting telecast performances. Full equipment for television was installed in the library.

The Worcester (Mass.) Art Museum cooperated with the agricultural extension service in a project designed to interest farm women in the decoration of their homes. The Schenectady (N. Y.) Museum, in cooperation with the public schools, provided a program of evening classes for adults in such informal courses as weaving, art and music appreciation, and photograph tinting. The Cleveland Health Museum placed emphasis on the field of adult hygiene, using traveling exhibits under the caption "Live Long and Like It." The Buffalo Museum of Science offered a variety of informal courses ranging from elementary astronomy to fly-tying.

The National Parks Association recommended that the National Parks Service develop a suitable education program, using the natural features of the parks as instructional material. It was believed that the visitors to each primeval park should be informed of the special significance of that area and of the park system as a whole.

The Seattle Public Library began a series of film forums in October which will continue throughout the year. The Baltimore Museum of Art is unable to meet the wide demand for evening classes in crafts because of lack of work rooms and instructors. The Houston (Tex.) Museum of Natural History conducts a School of Natural History which has grown rapidly in enrollment since it was founded three years ago. The Colorado Museum of Natural History (Denver) has added an evening series on "Nature on the Screen." Baltimore's Museum of Art plans an extension museum for Baltimore's colored neighborhood. The San Francisco Museum of Art has arranged a series of lecture demonstrations on the modern dance and folk dance programs.

The executive secretary of the American Library Association at the Detroit conference pointed out among other things the following with respect to the obligation of libraries to adult education. First, the public libraries must concentrate on materials and services for persons who have a purpose in their reading; second, the libraries must be aware of the social, economic, political and cultural objectives and be prepared to help people advance toward those objectives; third, the library must cease to be a book library only and become a learning materials center; fourth, the public library must expand its information services and must also make its services attractive and useful to the large percentage of the population who now ignore the library.

RELIGIOUS EDUCATION

The National Academy for Adult Jewish Studies sponsored a fifth anniversary conference dealing with new directions for adult Jewish education and Jewish culture. The annual report of the Academy for 1946 lists effective adult education programs for those of the Jewish faith. The National Jewish Welfare Board lists the following current projects in the field of adult education: Jewish center lecture and concert bureau, Jewish book council of America, Jewish education department, Jewish music council, its services for the armed forces, and its women's division. Under this program 1,095 lectures were booked during the year, the creation of libraries to enrich study programs was stimulated, program material was supplied, a cultural program for American Jews advanced, and guides for those in the armed services prepared.

The Young Women's Christian Association stressed its program of leadership training and Christian education from the point of view of the personal life of the individual. Programs for better race relations were promoted and interracial activities initiated within the organization. A public affairs program dealt with citizenship education.

The Federal Council of Churches of Christ in America is the official agency through which 25 national denominations, comprising 140,000 local congregations with a membership of 27,749,967, joined in programs of religious education. Its various endeavors touched among others the fields of Christian social relations, marriage and the home, industrial relations and economic tensions, race relations, a just and durable peace, world service, and relief and reconstruction. The Young Men's Christian Association stressed particularly its guidance programs. Counsellors were trained and additional centers established to serve returning veterans. In Boston, for example, the veterans' service center conducted a job hunting school for training ex-servicemen in the techniques of getting a job. Job forums were conducted and radio programs set forth veterans' rights.

PUBLIC SCHOOLS

In New York the legislature approved a budget of $100,000 for department of education staff services in the field of adult education. It was planned that the appropriation be used to organize and supervise pilot community adult education programs.

The conference for state directors of adult education, at West Point in September, concluded that the state departments of public instruction and the public schools should play a major part in the continued growth of adult education. Many states have recognized this and have appointed a state director of adult education to the staff of the chief state school officer. Many other states are laying plans for the establishment of a statewide program of adult education. The conference studied the responsibilities and functions of state directors of adult education together with ways of carrying out these responsibilities and functions. The second purpose of the conference was to provide practice opportunities, a skill needed by state directors in carrying out their responsibility of developing increased in-service training of adult leaders. The United States Commissioner of Education was also urged by a resolution to establish a division of adult education with a director and staff to be coordinate with the division of elementary, secondary, and higher education.

Baltimore public schools outlined educational opportunities for returning veterans in a special publication. In Muskegon County (Mich.) 50 individual study groups were established under the Michigan state experimental adult education program. Philadelphia established extensive youth recreation-education programs in nine evening schools, and sponsored a leadership training program for its home and school council.

FEDERAL AGENCIES

Many agencies of the Federal Government carry on programs which can be classed as adult education. For example, the Children's Bureau, formerly of the U. S. Department of Labor but now a part of the social security administration of the Federal Security Agency, classifies much of its work as having to do with adult education. During the year, this Bureau gave special attention to the production of simple materials for parents. It also gives consultant service to a wide variety of organizations and individuals. Suggestions have been given in the preparation of radio materials for many of the broadcasting corporations. Help is provided in planning parent education courses and workshops. The Bureau took an active part in the organization and writing of materials for the Attorney General's conference on the control and prevention of juvenile delinquency.

The activities of the Tennessee Valley Authority in adult education center about problems of natural resources and their uses. The Authority, in its program, cooperates with established educational agencies. Through the agricultural extension services in the Valley, TVA provides information and materials for demonstrations of TVA fertilizers, of farm wood-lot development, and of improved use of electricity in rural areas. Through the state departments of forestry and conservation, educational activities in the Valley are directed toward a full understanding of forest and wild life as a key resource of the region.

For an appraisal of post-war needs and plans for the program of the Cooperative Extension Service, of the U. S. Department of Agriculture, carried on with the land-grant colleges, one can turn to the Kepner Committee Report on the "Scope of Extension's Educational Responsibility." The Committee felt that the extension service had reached a transition period in its development. Consequently it recommended certain adjustments in the distribution of total effort. The Committee felt that a maximum increase in emphasis was needed in the fields of (a) economic problems and public policies; (b) marketing and distribution; (c) certain segments of the field of social relations, adjustments, and cultural values; (d) farm home and buildings; (e) health, particularly the developing of a better understanding of the total rural health situation and methods of improvement through group action. It was also felt that problems in the field of production techniques which have historically commanded the major portion of extension effort might now proportionately receive somewhat less emphasis.

Thousands of younger men will be inducted into the United States armed forces in the next few years either voluntarily or through selective service. The question arises as to whether a two-year tour of duty will cause an educational blackout. The services plan to continue their program of education which operated on a broad scale during the war years. There are three official government organizations working in the educational field. One of these is operated by the Army —the Information and Education Division of the War Department Special Staff. In the Navy, there is the Educational Service Section, while the third agency operated jointly by the War and Navy departments is the United States Armed Forces Institute located at Madison, Wis. Both off-duty and on-duty classes are available to service men as well as a wide variety of correspondence courses through the Armed Forces Institute.

PROFESSIONAL ADULT EDUCATION GROUPS

Activities of the Department of Adult Education of the National Education Association include: (1) sponsoring of a national veterans' education conference in Cleveland, January 1946, and a second national conference on veterans' education scheduled for Memphis, Tenn. in January 1947; (2) a work conference for state directors of adult education at West Point; (3) plans for a conference of city directors of adult education and of secretaries and presidents of local and state councils and associations, scheduled for the spring of 1947; (4) offers services in helping state and local associations work out problems of organization and development; and (5) took the leadership in developing a joint national planning commission on adult education made up of representatives of the leading national associations on adult education.

The legislative committee of the National University Extension Association, composed of the extension divisions of 65 colleges and universities, is again planning to introduce in the 80th session of Congress, legislation designed to establish a general extension service which would supplement that now available from schools and colleges of agriculture. The American Association for Adult Education, beginning in the fall of 1945, has succeeded in reviving the various regional conferences on adult education which it supported more or less regularly in the years prior to America's entry into the war. The Association's *Inter-Council Newsletter* contains much of current information regarding activities of regional, state, and local councils. The Association is also one of the constituent members of the National Committee on Film Forums, and in March 1946 it began publication of a new periodical known as *Film Forum Review.*

Largely through the efforts of professional organizations of adult education, a resolution in support of adult education by the United Nations Educational, Scientific and Cultural Organization was adopted at its initial meeting in London. It reads: "*Whereas* the strength and stability of democratic government depends upon the force of enlightened public opinion, and, *Whereas* Adult Education has an immediate contribution to make to the enlightenment of the citizens of the world, *It is resolved:* That UNESCO be urged to establish close working relationships with the various adult education agencies, public and private, and that the Preparatory Commission, in elaborating proposals for the committee structure and the Secretariat of UNESCO, take full account of the need for adequate machinery designed to promote such cooperative relationships."

COLLEGE AND UNIVERSITY EXTENSION

Developments in university extension have been featured by great increases in the number of registrations for both class and correspondence study. These increases may be attributed to the veteran load. In correspondence instruction, contracts have been made by many institutions with the Veterans Administration. Many institutions established off-campus centers to offer full-time class instruction for veterans. Other colleges, beginning to recognize their adult education functions, are taking formal action by establishing schools or divisions of "non-resident or adult instruction" or of "public service." The urgent need still exists for Federal subsidy to general extension in the manner in which extension services of schools and colleges of agriculture are supported.

The University of Wyoming has established a department of adult education and community service. The University of Wisconsin extension division established industrial supervision institutes, consisting of one-week courses for key workers in industry and business, designed to develop greater effectiveness among management and foremen personnel. Rochester Evening Community College registered 740 adult students. The University of Minnesota's Center for Continuation Study, in cooperation with various labor groups, carried on an institute on atomic energy.

Roosevelt College (Chicago), in its newly established activities, features evening adult courses to give equal higher educational opportunities to all having the ability and determination to profit from them. The Pennsylvania State College opened additional new technical evening schools, making a total of 13 such schools it operates in the state. Registrations for the first semester totaled approximately 3,000, 78 per cent of whom are veterans. The University of California offers refresher courses for doctors dealing with general principles and recent advances in medicine, public health, surgery, and related basic sciences.

At Mississippi State, ten community workshops of five weeks' duration for educators have been held, attended by 1,000 administrators, teachers, rural ministers, and welfare workers from 35 counties. A college extension center has been opened at Vicksburg with the laboratory facilities of the Mississippi River Commission being used. Forty-five counties are represented in the correspondence instruction registrations of the University of North Dakota. At the University of Arizona, registrations for correspondence and class instruction exceed all previous records. The most significant development in adult education at Purdue University has been the rapid expansion of the technical institutes. Units are now operated in Indianapolis, Muncie, Anderson, Fort Wayne, Gary, La Porte, Michigan City, and Hammond. Student enrollment in these centers has doubled each year for the past two years. Other interesting developments at Purdue include the life insurance marketing institutes and short courses for accident and health underwriters.

At the University of New Hampshire general extension in 1946 entered the field of industrial activity. An industrial conference attended by 300 foremen and supervisors from industry was held. Similar activity was begun in the field of liberal arts. At Rutgers University, extension courses are being given in behalf and at the request of professional organizations and government units such as the New Jersey Department of Institutions and Agencies. At The Pennsylvania State College veterans' advisement centers have been established in eight centers in the state in cooperation with the Veterans Administration. The close of the year will see approximately 8,000 veterans guided and counselled in these centers.

The University of Missouri's previous activities in the field have been reorganized into a new unit "adult education and extension service." There are six subdivisions indicating activity of this unit: community service; veterans' training, extension, and teaching; correspondence and records; visual education; and evaluation. An interesting farm training program for farm veterans has been organized in cooperation with the Veterans Administration, and a continuous in-service teacher training program is another feature of the Missouri program.

In university extension at the University of Nebraska 400 to 500 veterans have registered in a special supervised study laboratory. Sales of correspondence course syllabi in this field to other institutions will total at least 35,000. A general increase in calls for extension work in art is also noted. One-day art workshops for teachers are being held over the state with the financial assistance of a $6,000 grant from the Carnegie Corporation. Other features of the service include a community program service, a labor college, and an institute on small community life. The division of general college extension at the State College of Washington notes a greater demand for extension instruction in the technologies and related industrial arts growing out of the industrialization movement in the Pacific Northwest. Great interest is also indicated in family life education and in a counselling service for parent study groups.

In Indiana University previous activities have been reorganized under a division of "adult education and public services." Greatly increased enrollments in extension class centers have been noted, arising chiefly from registrations of veterans. Requests for audio-visual materials are the greatest in the history of the university. Group discussions of great books is another project which has been extremely popular.

The director of university extension at the University of South Carolina notes the acquisition of a permanent home for the Opportunity School. It is operated by the State Department of Education and located at the Columbia Army Air Base. At the University of Idaho a new unit combining many former separate activities has been formed called "division of educational field service." At Ohio University 900 students are enrolled in off-campus branches in Portsmouth, Chillicothe, and Zanesville. The University of Connecticut notes, among the more significant trends in adult education, that of adults seeking training in the technics of community leadership and in the area of more effective group living. Practically every high school in North Dakota is using correspondence courses offered by the North Dakota Agricultural College.

Montana State University's extension division has undergone a reorganization designed to give greater emphasis to adult education. The new unit is called "division of public service." A study in Montana, financed jointly by the Rockefeller Foundation and the six institutions that comprise the University of Montana, has been instituted to find ways and means of stabilizing and enriching life in the rural communities. At the University of Iowa a series of conferences have been held dealing with the subject "What's Ahead in Adult Education?" Five visual education teaching conferences have also been held in larger cities of the state as well as a conference on inter-American affairs and another on school administration and supervision. Refresher courses and institutes in law, dentistry, medicine, and engineering have been held for professional men returning from the armed forces. The University's radio station WSUI has continued to make significant contributions during the year to adult education with its broadcasts from the classroom.

The University of Texas carries on a broad program of university extension. One staff member devotes considerable time to visiting colleges in the state holding discussions with faculty and others on the need for universal adult education. Evening classes have been opened up in a great many centers though such units are in great need of financial assistance. Demand for extension classes has been much greater than the division of extension has been able to meet. The extension program at the University in industry and business in 1945-46 reached approximately 24,000 adults in 365 communities in Texas. Enrollment in correspondence totaled 5,518. The division of general college extension at Rhode Island State features short courses in life insurance and a personnel and tax institute. Full-time centers for veterans have been established, and a workers' education program is in progress.

WORKERS' EDUCATION

In the midst of great industrial strife during the year, it was believed by many that a program of labor education wisely planned and conducted could do a great deal to forestall labor disputes and promote better labor-management relations. One of the most significant developments in this field consisted of plans made by the Committee for the Extension of Labor Education for the introduction of legislation which would provide for a labor extension service similar to the agricultural extension service. Such a service would be established in the Department of Labor. A bill providing for such an agency was introduced in the 79th Congress, and plans are underway for introduction of a revised bill in the 80th Congress.

In Seattle, a labor school was established with a board of 17 directors representing labor and educational organizations. The California Labor School in San Francisco reported an enrollment of 1,200 students. The School for Workers at the University of Wisconsin sponsored a local radio program as well as a number of summer institutes. At The Pennsylvania State College, 400 local officers of the United Steelworkers of America attended one-week institutes in July. Instructors were members of the faculty of that institution. These institutes were the forerunner of a planned extension program for the 250,000 members of that union in Pennsylvania. The International Ladies' Garment Workers plan to establish community radio stations in a few selected areas.

The American Labor Education Service stressed the need to strengthen education as it relates to the alleviation of racial tensions, labor's role in government, and workers' education on the part of universities. This agency offered opportunities to colleges and universities for discussion of their functions and purposes in their contact with the labor movement. The 25th annual convention and conference of the Workers' Education Bureau of America took place during the year. Its activities over this period fall into these categories: institutes and conferences, assistance to labor organizations, public relations, research, publications, radio programs and others. Its program of labor institutes has been notable.

WOMEN'S GROUPS

The League of Women Voters, an aggressive organization in the field of adult education, found its membership increasing 25 per cent in the two-year period ended April, 1946. Progress has been made in decentralizing League activities so that local leagues run a number of neighborhood discussion-action groups. Beginning in 1947 a campaign featuring the use of film strips and pamphlets is being started to have people consider and discuss basic economic facts.

The American Association of University Women's adult study program continued to center about education, art, status of women, social studies, and international relations. Emphasis particularly was on an educational program dealing with community matters—housing, health, and recreation. Possibilities in living under a $1,500-a-year family budget for four persons were discussed by local clubs. Art exhibitions were sponsored in 71 communities. Local and national legislation also received attention. The main feature of the national program of the General Federation of Women's Clubs in 1946 was its youth conservation program. Club women were instrumental in establishing youth councils and youth centers in hundreds of communities. Surveys as to needs of young people in the fields of health, education, recreation, and family life were carried on. Other programs dealt with the United Nations cause, inter-American understanding, and the Federation's national legislative program.

In general there was some evidence of a trend away from use of programs prepared by a central office and sent out in large quantities to local branches, in favor of more vigorous programs rooted in local situations and needs.

METHODS AND MATERIALS OF ADULT EDUCATION

The American Association of Adult Education planned a new edition of its *Handbook of Adult Education in United States* to appear in 1947. The National Committee on Film Forums, composed of representatives of four national agencies, sponsored a quarterly publication *Film Forum Review*. *Parents Magazine* established a parent education clearing house. The National Congress of Parents and Teachers prepared a special publication setting forth facts on the formation and activities of the United Nations Organization. The Woodrow Wilson Foundation (New York) sponsored a monthly publication, *United Nations News*. The National Committee on Atomic Information published a kit on atomic energy for study groups.

One of the striking developments of the war period was the steady rise in use of 16 mm. motion pictures and other instruments and media of adult education. With hostilities now ended, this development continues to go rapidly ahead. During the war period the U. S. Office of Education produced 457 sound motion pictures, 432 silent film strips and 457 instructor's manuals. During this same period the armed forces collected a total of approximately 22,000 prints of sound motion pictures. All of these films used for war production purposes are now available to schools and apprentice training programs in industry. Public libraries are rapidly becoming aware of their role in using and distributing motion pictures and have started film divisions. The membership of the Educational Film Library Association numbers quite a few public libraries as well as a great many other agencies interested in the production and distribution of visual aids for educational purposes. During the year it started a film evaluation project. The Cleveland Public Library's film bureau is assisting in film forums on inter-racial relationships. The Akron Public Library established a film collection as a part of its Group Service Division while the Brooklyn Library last year put on a series of film forums. Experimental film forums are planned by the Albany Public Library.

Obviously this summary is in no sense an exhaustive one but it is representative of organized efforts made by many agencies to further objectives referred to.

NEGRO EDUCATION

By William Anthony Aery
Administrative Assistant, NACA Langley Memorial Aeronautical Laboratory

GENERAL

Negro education during 1946, despite labor-management flare-ups and political confusion in Georgia and Mississippi, as well as a race riot in Tennessee, moved steadily forward. White liberals in the South, including Governor Arnall of Georgia, President Graham of the University of North Carolina, and Virginius Dabney of Virginia, spoke out clearly in favor of better race relations. Departments of education in southern states devoted more personnel to the problems of Negro education. The Federal Government, through the U. S. Office of Education, gave wider and fuller service to workers in the field of Negro education.

The education of Negroes in 17 southern states and the District of Columbia is a severe tax on the region's economic resources and development. For the year 1943-44, according to *Statistics of State School Systems* (published in 1946 by the U. S. Office of Education), the following figures were given: Estimated school population 5.17 years of age, July 1, 1940 (U. S. Census), 2,827,565 (white, 8,915,305); percentage distribution of school population, 24 (white, 76); enrollment in elementary and secondary schools, 2,276,742 (white, 6,893,598); instructional staff, 66,553 (white, 245,629).

Some southern states with especially large Negro school populations, for which education must be provided or limited economic income, are as follows: Alabama, 228,468; Arkansas, 99,999; Georgia, 256,023; Louisiana, 163,248; Mississippi, 272,495; North Carolina, 256,634; South Carolina, 204,942; Tennessee, 102,734; Texas, 199,547; and Virginia, 142,841.

The total current expenses for 10 Southern states ranged as follows: Alabama, $4,867,258; Arkansas, $2,034,653; Florida, $4.043,500; Georgia, $4,662,107; Louisiana, $5,513,782; Maryland, $4,525,421; Mississippi, $2,622,077; North Carolina, $10,907,205; Oklahoma, $2,972,210; and South Carolina, $4,267,345.

ELEMENTARY EDUCATION

The crux of Negro education is the growth of good elementary schools, especially the grade, distribution of pupils, and the increase in the number of accredited elementary schools. The latest report on the Negro elementary school enrollment gives a total of 2,029,368, or 89.1 of the total Negro school enrollment. For whites, in the same area, the total elementary school enrollment figure is 5,407,849, or 78.4 of the total white school enrollment.

SECONDARY EDUCATION

The enrollment in Negro high schools, while it is about 50 per cent what it should be on the basis of population, has been increasing at a fair pace and will undoubtedly increase as the South improves its economic status. During 1943-44 (latest available), there were 247,347 Negroes, or 10.9 per cent of the Negro school population in high schools. For whites, in the same area, the total high-school enrollment was 1,485,649, or 21.6 per cent of the total white school enrollment. The distribution of Negro high-school pupils was as follows: boys, 84,886; girls, 162,488. The Negro high-school instructional staff of 11,330 was distributed as follows: Supervisors, 34; principals, 789; teachers, 10,507 (men, 3,658; women, 6,849). The high-school graduates numbered 31,180 (boys, 8,338; girls, 22,842).

HIGHER EDUCATION

For the Fall term 1945-46, according to Prof. Martin D. Jenkins of Howard University (*Journal of Negro Education,* Spring 1946), 105 Negro institutions enrolled 41,741 resident undergraduate students, an increase of 15.7 per cent in 96 institutions over 1944-1945. The distribution was as follows: male, 9,601; female, 32,127; or 23 per cent *vs.* 77 per cent. Of the undergraduate population, 16,723 freshmen, the males were 27.6 per cent, and the female, 72.4 per cent, an increase of 12 per cent over 1944-1945 (male increase, 43 per cent; female increase, 9 per cent). The 4,556 male freshmen constituted almost exactly half of the total male enrollment reported.

During the school year 1944-45, according to Professor Jenkins, a total Negro college population of 65,958 was reported as enrolled in 101 institutions. The 37 public-controlled institutions enrolled 19,384 students, or 46.4 per cent of the total. The 68 privately controlled institutions had an enrollment of 22,357 Negro students, or 53.6 per cent.

The 39 institutions fully accredited by their regional associations reported an enrollment of 25,893 students, or 62 per cent of the total; the 25 institutions not fully accredited reported 9,535 students, or 22.8 per cent; and the 41 institutions not accredited reported 6,313 students, or 15.2 per cent.

Generally speaking, the 113 Negro institutions of higher education are relatively small in enrollment. The median institution has an enrollment of approximately 310 students. In short, as of the Fall 1945-46, some 44,000 Negroes were enrolled in Negro colleges and universities—"the highest in the history of these institutions," according to Professor Jenkins, and the enrollment for the school year 1944-45, including summer session and extension classes, was approximately 70,000 students. It should also be noted that the Fall term enrollment was about 10 per cent greater than in 1941-42, the previous peak year, despite the fact that the male enrollment was well below normal.

Dr. Thomas W. Turner of Hampton Institute, published his findings on "Science Teaching in Negro Colleges" (*Journal of Negro Education,* Winter 1946). Twenty-seven colleges stated that they were preparing students for the field of science teaching, 24 for medicine; 19 for dentistry; 14 for home economics; 13 for general agriculture. The offerings in natural sciences generally omitted geology and astronomy. Not a single Negro college shared in the Federal funds for experiment stations "as would enable it to organize and develop the vocational aspects of the sciences similar to that which is done in white State colleges in the South." Dr. Turner added: "The absence of the experiment station opportunity is the missing link in the vocational education of Negro youth, especially in those institutions [Negro land-grant colleges] which offer training in agriculture, home economics, in the areas of plant and animal nutrition, and in the physical and engineering sciences."

This well-known Negro biologist outlined functional programs for teaching in the areas of plant, animal, and physical sciences. He closed his findings as follows: "In neglecting the physical sciences the Negro colleges are not only ignoring the trends pointing to the largest field of job activity for the future, but they are neglecting also the present-day observations as to what science equipment is most useful for earning a living at present and in succeeding generations."

The vastly increased number of Negro college students has lead to the overcrowding of dormitories, laboratories, and classrooms, as well as the unwarranted taxing of instructional facilities and the failure to provide students with an adequate educational environment.

English composition classes of 80 students and elementary language classes of 60 students, taught by a single teacher without assistants, have not been too uncommon in Negro colleges. Then too, Negro college students have been enrolled, taught, failed, and dropped, without an interview "and without an evaluation by the college of their abilities or disabilities."

AIMS OF THE LIBERAL ARTS COLLEGES

The aims of the Negro liberal-arts college, which are ill understood by whites, are summed up in the following statement, prepared for Talladega College (Alabama) but applicable with reasonable modifications, to other institutions that attract young Negroes who are non-vocational in their interests:

"Talladega College . . . does not bid for the attendance of men and women who have no serious purpose in entering college, but it welcomes the student of genuine intent and superior ability. The College aims to provide, under guidance, an opportunity for vital contacts with inspiring men and women with the important areas of knowledge, and with varied experiences in living by means of which the student, in his fundamental task of building a personality, may grow. . . . The student is expected to make reasonable progress in the acquisition of usable information concerning the general nature of things and of men . . . progressive mastery of a chosen field of study . . . the mastery of such skills and techniques as are needed for effective living; and the constant practice of constructive attitudes which will lead him to promote the common welfare."

FISK UNIVERSITY

Dr. Charles S. Johnson, Negro sociologist, was elected president of Fisk University (Nashville, Tenn.). Oct. 29, 1946 to succeed Dr. Thomas E. Jones, now president of Earlham College (Richmond, Ind.). Dr. Johnson had previously been named by President Truman as a delegate to the United Nations Educational, Scientific, and Cultural Organization. Earlier in 1946, he was a member of a committee of 26 American educators sent to Japan at the request of General MacArthur to aid in revising the Japanese educational system. He is a trustee of the Julius Rosenwald Fund, having served since 1934, and also director of the Race Relations Forum of the American Missionary Association, which founded Fisk University 80 years ago.

The Fisk trustees set the 1946-47 budget at $664,000 to care for an enrollment of 227 men and 555 women. Eighty-five men came from the armed forces, 73 per cent of whom are freshmen. In 1945, Fisk received $44,900 from United Negro College Fund, Inc. The present endowment of the University is $3.900,000, and the plant value is $1,700,000, more than three times the value of the institution in 1926.

On April 26, Fisk opened an international student center in which American Negroes will have the opportunity of becoming acquainted with the cultures of other lands. This was made possible by gifts from Miss Margaret Shaw Campbell. The director is Evadeane Kemp, formerly associated with International House in Chicago.

POST-WAR PROGRAM FOR NEGRO COLLEGES

Post-war education in 34 Negro colleges in 19 states, on the basis of Federal survey, involves the following expenditures, according to Dr. C. L. Spellman, professor of education at the Florida A. and M. College (*Journal of Negro Education,* Spring 1946): for proposed additions, from $100,000 in one college to $3,000,000 in another; two-thirds of the colleges propose improvements valued at $250,000 to $1,500,000. In short, about two-thirds of the Negro colleges plan to spend between $500,000 and $1,000,000 for dormitories, special subject-matter buildings, health and physical education facilities, as well as faculty living quarters. The Negro colleges also propose to increase somewhat the teaching personnel to take care of sub-college work for veterans.

FINANCIAL CAMPAIGN

In April 1946, there opened the third annual campaign of the United Negro College Fund (John D. Rockefeller, chairman) to raise $1,300,000 for 33 Negro private colleges. Frank M. Totton, national campaign chairman, said: "Faced with the responsibility of educating thousands of returning veterans, the already heavily burdened facilities of these institutions are being placed under pressure that demands assistance if the need is to be met. We intend to campaign vigorously this year to assure that the fund is able to give that assistance in full measure, as a necessary step to improving living standards for one-tenth of our population."

An advisory committee of 82 prominent men and women throughout the country is serving in this campaign. The daughter of former Chief Justice Charles Evans Hughes, Mrs. Chauncey L. Waddell, was named chairman of the New York women's committee whose quota is $200,000.

The New York Times (Apr. 7) spoke editorially as follows: "The Negro played an important, and often heroic part in the war. He shared the mud, the danger, the sweat, and the tears. Now he has the right to continue his interrupted education, if he wants to do so. Many college doors will be closed to him and to others, regardless of race, color or creed, simply because there are too many returning veterans to be cared for at once in the colleges of their choice. But we cannot allow these 33 Negro private colleges to turn away any applicant because they lack funds, or to curtail their programs because of it. . . . As we mutually put a proper, unprejudiced estimate on the contributions of all races to the common good, we are more surely closer to the goal of living together in harmony."

LAND-GRANT COLLEGES

The Conference of Negro Land-Grant Colleges, at its summer meeting, adopted resolutions covering service to agricultural extension, Federal aid to education, full employment, improvement of inter-group relationships, national security, education of veterans, and reorganization of the U. S. Office of Education. The report of the Committee on Resolutions was printed in *School and Society* (Aug. 31).

The presidents of the Negro land-grant colleges agree upon the following program of work for the immediate future:

(1) Serve rural people through agricultural extension by adding Negro personnel, more public funds, and larger participation of Negroes in the administration of services among their own people.

(2) Secure Federal aid for education so that all individuals, regardless of race, creed, or origin will share equitably in new educational facilities.

(3) Urge upon employers the use of all citizens, regardless of their racial, religious, or social status, and also urge that official provisions be made for the use of the services of qualified Negroes in all phases of governmental life.

(4) Assume moral responsibility of having Negro land-grant colleges work actively toward improving human relationships, especially in the South, since "all human beings are essentially the same in mind, body, and spirit."

(5) Help to establish in Negro institutions standard ROTC units and other Federally supported training programs.

(6) Give wise and sympathetic counsel to frustrated Negro veterans who seek effective training and then check carefully their placement so as to help effectively those who labored patriotically to achieve a democratic ideal.

(7) Cooperate with the U. S. Office of Education to improve its organization and secure adequate funds for its rapidly expanding program.

PROFESSIONAL EDUCATION

Professional curricula for Negroes were offered on a limited scale in eight institutions—Atlanta, Howard, Lincoln (Missouri), Lincoln (Pennsylvania), Meharry, North Carolina College for Negroes, Virginia Union, and Xavier—in the following fields: Law, three institutions, social work, two; pharmacy, two; library science, one.

The evidence is clear that more attention should be given to training Negroes to be of professional service to their race, even though some excellent work is being done in Negro and non-Negro professional schools, and a start in the right direction has been painfully made toward helping qualified Negroes win professional efficiency.

The dire need of trained Negro physicians for the Harlem area of New York City was forcefully outlined by Mrs. Edith M. Alexander (Mayor's Committee on Unity) in March 1946 before the City-wide Citizens Committee on Harlem. Mrs. Alexander (Negro) urged the New York City government to train more Negro physicians and to allow for the appointment at Lincoln and Bellevue hospitals of qualified physicians.

In addition to 264 Negro students enrolled in dentistry at Howard University and Meharry Medical College, Dr. Clifton O. Dummett discovered 24 Negroes who were studying dentistry in 12 non-Negro institutions (*Journal of Negro Education* Winter 1946). When the dental needs of the vast Negro population is considered, there can be no question that some intelligent effort should be made to attract to dentistry some of the Negroes who are now going into medicine and kindred fields. More funds, too, are needed to provide physical facilities for the modern teaching of dentistry.

EDUCATION OF NEGRO WOMEN

Bennett College (Greensboro, N. C.) held its annual home-making institute in March 1946. President David B. Jones emphasized the importance of Negro women taking more interest in business education, since already nearly 50 per cent of the more progressive Negro business enterprises are owned or operated by them. President Jones announced a post-war program to complete an endowment fund of $2,000,000 and a building fund of $300,000. It is planned to continue Bennett College as an institution for the training of Negro women in the liberal arts, with emphasis upon home-making. The present enrollment is 412, with a teaching staff of 38.

GRADUATE EDUCATION

Fourteen Negro institutions reported a total of 576 graduate students, enrolled during the Fall term 1945-46 (male 30 per cent; female, 70 per cent).

Dr. W. D. Funkhouser, dean of the Graduate School, University of Kentucky and president of the Conference of Deans of Southern Graduate Schools, prepared for the *Journal of Negro Education* (Winter 1946) a detailed report on "Graduate Work in Negro Institutions in the South."

In May 1945, the General Education Board (New York) appropriated $5,000 to be used for a series of regional conferences on graduate work for Negroes, held in Durham, Atlanta, Nashville, Jackson, and Prairie View.

"The white deans," according to Dr. Funkhouser, "made it a point to allow the Negro representatives to take the lead in the programs and attempted to guide the discussions into the channels most desired by the Conference. . . . The papers were presented almost entirely by the Negro educators. . . . The more vital topics included the needs of the region for graduate work in Negro institutions; the actual work now being done; the potential Negro graduate-student population of the region; the opportunities available for these students; the present resources for graduate work in the area concerned; the problems involved in graduate instruction and research; the extent and condition of physical plants; and particularly the available library facilities. Most of the papers presented had been carefully prepared; some were very scholarly; and all showed a serious and honest attempt to evaluate the present status of Negro graduate work and suggest the acute needs of both the present and the future."

Segregated graduate schools for Negroes have already become extremely expensive. R. I. Brigham ("The Price of Segregation," *Survey Graphic,* March 1946) pointed out that Missouri had spent more than $500,000 to graduate one Negro student from the School of Law and ten from the School of Journalism. *School and Society* (May 18) pointed out that "this practice will grow worse financially as qualified Negroes request training in engineering, mining, medicine, and other graduate fields."

TEACHER EDUCATION

Teacher education in Negro institutions has taken on new meaning during recent years because of the expanding rôle that Negro citizens have begun to play in American economic life and the consequent need of giving better training to Negro men, women, and children.

Dr. Virgil A. Clift, professor of education and director of veterans' education at the North Carolina Agricultural and Mechanical College (Greensboro, N. C.), presented an excellent report on "Criteria for Teacher Education in Negro Institutions" (*Journal of Negro Education,* Spring 1946).

His criteria emphasized that they (a) should exemplify democratic living at its best and the curriculum should provide students with experiences which provide an adequate understanding of the growth of children and adolescents, understanding of the nature of society and the individual; (b) should strive to develop in its students characteristics that are essential to a democratic personality; (c) should develop in its students competencies that are essential to a democratic teacher and help them obtain a comprehensive understanding of the fields in which they are to teach; and (d) should imbue its students with the desire and techniques by which they may become progressively better adjusted as a minority group in American culture.

Mrs. Catherine W. Duncan, director of field training and associate professor of education at Fort Valley State College (Georgia), outlined (*Journal of Negro Education,* Winter 1936) an effective program in Negro teacher education. Provisions have been made for faculty members to visit rural schools, homes, and churches; to become acquainted with state and county agencies engaged in rural improvement; and to meet and know children and adults of rural communities. Fort Valley State College aimed to have its students know intimately the life of Negro people by sending those ready for practice teaching to rural communities, where they have bought and cooked their own food, as well as managed their own daily living. The College also conducted on-campus "home" workshops in which teachers worked on their everyday problems. This work was supplemented by demonstration schools in which teachers could put directly to the test what they had learned from their instructors, their textbooks, and their laboratories.

The Atlanta University system of practice-teaching, in operation at Clark, Morehouse, and Spellman colleges, grew out of a conference which was called in 1940 by Dr. H. Reid Hunter, Assistant Superintendent of Atlanta public schools. A supervisor of teaching practice was appointed to serve as the coordinator of work to be done by four institutions. Education seminars for prospective elementary and secondary teachers paralleled the students' observation and practice-teaching in the senior year and brought into close association students and faculty members who worked over materials in such courses as psychology, sociology, curriculum-making, and methods of teaching. These conferences promoted cooperative thinking and democratic processes.

During the summer school term, Hampton Institute offered four workshops in guidance, supervision, high-school dramatics, and audio-visual aids in education. It also offered a three-week institute on problems in the teaching of arithmetic.

VETERAN EDUCATION

Virginius Dabney (Richmond, Va.), outstanding and fearless Southern liberal, stated that, though the number of returning Negro ex-servicemen is far larger than it was following the First World War, these Negroes have been living quietly throughout the South. "One reason for this," he adds, "may lie in the fact that they feel the lot of Southern Negroes has improved during their absence. Such things as abolition of poll taxes, equalization of teachers' salaries in the public schools, employment of Negro policemen in the Negro sections of Southern cities, and appointment of Negroes to positions of trust by Southern Governors and Mayors have seemed to lessen tensions" (*The New York Times*, March 3).

The representatives of 52 Negro colleges and 127 high schools met at Tuskegee Institute (Ala.), Dec. 4-5, and, by resolution, urged the Veterans Administration "to make it mandatory to employ competent Negro personnel in advisory and counseling agencies." These representatives at the thirteenth annual convention of the Association of Colleges and Secondary Schools endorsed the vocational opportunity campaign of the National Urban League; commended President Truman for including President F. D. Patterson of Tuskegee on the Commission on Higher Education; and petitioned the Federal Government "to unify and provide more effective distribution of surplus properties."

Negro colleges were somewhat divided in their attack on the veteran-education problem. According to Professor Spellman, 19 colleges expressed the opinion that veterans could best take care of the education of veterans; two believed that either colleges or high schools could perform the task equally well; and others offered no solution. Some 75 per cent of the Negro colleges expressed the opinion that regular staff teachers could best handle veterans, assisted, of course, by a few specialists. This situation will spread even more thinly the supply of Negro college teachers. Eleven colleges anticipated a change in teaching techniques, owing to the presence of veterans; 15 did not anticipate any movement toward the introduction of intensive methods which were developed by the Army and Navy during the Second World War. Ten colleges expressed faith in Army-Navy teaching methods; ten, opposition; and 11, uncertainty as to their value.

Eighty-seven Negro educational institutions reported a total veteran enrollment of 1,973, which included students on the secondary and college level.

ADULT EDUCATION

The Carnegie Corporation (New York) made a 5-year grant in August of nearly $24,000 for the purpose of raising the level of education among Negro adults, according to Dr. John W. Studebaker, chief of the U. S. Office of Education. The Census of 1940 classified nearly 3,000,000 Negroes as "functionally illiterate," that is, persons 25 years of age or over who had completed less than five years of school.

The first phase of the project was a conference, held in Washington, D. C., under the leadership of Ambrose Caliver, director, who is the specialist in the higher education of Negroes in the U. S. Office of Education. Programs, facilities, and materials developed in the field of adult education were presented by J. A. Atkins, Federal Works Agency; G. N. Redd, Fisk University; and Victor Morey, Immigration and Naturalization Service. The Washington conference was attended by 60 representatives from all levels of education and from various educational associations.

Hampton Institute held in March its fifth annual conference on adult education for Negroes, under the auspices of Associates in Folk Education, American Association for Adult Education, and its own extension department. Discussions dealt with such topics as methods of adult education, labor problems, world affairs, and educational problems specially significant to American Negroes.

To combat illiteracy among Negroes, Hampton Institute held (Aug. 12 to Sept. 14) an Institute on Adult Education, sponsored by the U. S. Office of Education, American Association for Adult Education, and National Conference on Adult Education, and financed by the Carnegie Corporation (New York).

Veterans who had taken part in the Army's wartime program for eliminating illiteracy joined with a group of educators, social workers, and college administrators in teaching teachers to handle illiterates, to prepare teaching materials, and to test newly acquired methods in class demonstrations.

The experimental group of 30 men and women will carry the new techniques and materials to new centers throughout the South and, in turn, many more teachers will learn how to help Negro illiterates. Those who learned at Hampton Institute will serve through educational institutions rather than as separate teaching units.

Paul A. Witty, former major in charge of the Army program for illiterates and now professor of education at Northwestern University, demonstrated the methods by which the "three R's" were taught illiterate service men in eight weeks. Negroes constitute one-third of the American illiterate group of 10,000,000 citizens.

RURAL EDUCATION

Alethea H. Washington presented a valuable set of 101 readily accessible references on rural education in the *Journal of Negro Education* (Spring 1946), grouped under the following headings: Dissertations and theses (taken from E. O. Knox's annual "Review of University Research Pertinent to the Negro"); books, reports, and bulletins; and periodical references. Her aim was to help men and women who are concerned with the problems of Negro rural education. Her hope was expressed that this list "would add to the evidence as to whether the condition of depressed groups should continue to be a live issue in the minds and hearts of thoughtful and progressive educators."

During the Summer of 1946, the Julius Rosenwald Fund made its final grants in teacher education to Fort Valley State College (Georgia), Tuskegee Institute (Alabama), and Jackson College (Mississippi). The rural schools in the counties in which these Negro schools are located have been vastly improved through the additional state appropriations which the Rosenwald aid helped to bring to the improvement of Negro education. In 1946 the Fund concluded its work in the development of rural-education study materials for children and teachers. For the period 1944-1946 the Fund expended slightly over $100,000 on rural-education projects in Negro colleges and $111,295 for other aspects of rural education. For the period 1934-1946 the Fund expended a total of $1,640,364 on the preparation of rural teachers and the development of rural education.

Prairie View State College (Texas) conducted an effective and extensive program of Negro rural education—a series of state conferences on rural life and education; county and local surveys; extension services; co-operation with the Jeanes system of supervising teachers field projects in community education; and co-operative community-education workshops.

Georgia State College (Savannah) served Negro rural education through its Log Cabin Community Center. It is also headquarters for Negro membership in the American Country Life Association.

Virginia State College (Ettricks) conducted off-campus workshops for Negro rural teachers and continued its reading projects for Negro adults in Chesterfield County.

Alcorn Agricultural and Mechanical College (Mississippi) employed four faculty members to serve as specialists in Negro rural education.

Pine Bluff College (Arkansas), through trained "key teachers," demonstrated better rural teaching practices throughout the state and maintained a standing faculty Committee on the Study of Rural Conditions.

South Carolina Agricultural and Mechanical College (Orangeburg), in cooperation with the Penn School (Frogmore, St. Helena Island), sent groups of seniors, for six-week periods, to help the Negro rural island population improve their schools.

Southern University (Baton Rouge) conducted projects in Negro rural education for the teachers of Washington Parish.

Mabel Carney, professor of education, retired, Teachers College (Columbia), supplied for the *Journal of Negro Education* (Winter 1946) valuable references dealing with college and university material on rural education which would serve Negro leaders and teachers.

HEALTH EDUCATION

The problem of health among Negroes is vitally related to their problem of education. Because the venereal disease problem is a major health hazard to the American Negro, the United Negro Insurance Associations, assembled for a convention in New York City, July 9-12, endorsed, by official resolution, local and national social-hygiene programs and pledged active support to such programs in their home communities. This endorsement was given by the representatives of 61 national Negro insurance companies and 10 regional associations. Roger F. Gordon, executive secretary of the Harlem Council on Social Hygiene, stated that Negro leaders had expressed the determination to eradicate among Negroes the menace of venereal diseases (*Social Hygiene News,* Dec.).

The North Carolina Tuberculosis Association, as a phase of its Negro health-education program, conducted a high-school essay contest and offered $3,000 to the School Health Coordinating Service for scholarships in health education to teachers at the University of North Carolina and at North Carolina College for Negroes (Durham). It also made a grant of $500 to help establish a course in public health education for Negroes.

VOCATIONAL EDUCATION

The National Urban League, which aims to improve industrial conditions for Negroes, held its fourteenth Vocational Opportunity Campaign (March 10 to 16). The slogan was: "The Future Is Yours—Plan and Prepare." Negro youth was invited to carve out its own future by training for jobs, choosing jobs, getting jobs, and keeping jobs. White citizenry was challenged to recognize the fact that, until economic equality for Negroes is fully established, "our vaunted democracy is weighed in the balance and found wanting." Fifty-four cities in 27 states, 50 colleges, and 800 secondary schools helped to make this campaign for economic education the success that it was. The League's education-service departments developed for the campaign self-rating charts which enabled students to observe their own growth in achieving wholesome attitudes toward life and living (*School and Society,* Mar. 16).

One of the outstanding and useful Negro schools of Mississippi is the Piney Woods Country School near Jackson (founded 1909). This school has a $250,000 plant, 1,700 acres of well-tended land, and an enrollment of 440 pupils (ranging in age from five to 40 years), drawn from 15 states. It has sent out literally thousands of trained farmers, mechanics, and housekeepers, as well as hundreds of practical and competent school teachers. It has carried far and wide to Negroes and whites "the gospel of good farming, healthful homemaking, sensible religion, and social life." The pupils learn to work with their hands to make a living; they study academic subjects to become adjusted to American life; and they learn to substitute duty and love for superstition and fear. Here is a fusion in education of what the North and the South can do together to help improve life for disadvantaged men, women, and children.

EXTENSION EDUCATION

Negro education in Virginia has gone steadily forward since 1908, when Negro extension work for the improvement of farms and homes got under way. Farm and home agents are employed in Virginia counties that have the largest Negro farm family population. During 1946, some 56 counties employed Negro farm and home agents, both men and women. During the war years, major emphasis was placed on the production and conservation of food and feeds.

During a single year the Virginia Negro agents visited over 21,000 farms or homes and influenced nearly 18,000 farm families in the improvement of their style of living. Some examples follow: In 177 corn hybrid demonstrations, the average yield of corn was raised to 41 bushels per acre on a total acreage of 877; the number of owned farms was increased; houses were painted; yards were beautified; sanitary toilets were built; year-round gardens were increased; and saleable farm products were increased. The Negro agents, year after year, have proved of inestimable value in raising living standards of Virginia Negro farm families (*Virginia Extension News Service*, June).

Sweet Briar College (Virginia) at its Founder's Day exercises in October presented the coveted Algernon Sydney Sullivan Award to Rachel Carter, Negro agent for the Virginia Agricultural Extension Division in Amherst County, "for 25 years of service and outstanding leadership." This award was voted by the College faculty and was given under the auspices of the Southern Society of New York in recognition of "the possession of such characteristics of heart, mind, and conduct as evince a spirit of love for, and helpfulness to, other men and women."

JULIUS ROSENWALD FUND

Edwin R. Embree, president of the Julius Rosenwald Fund (Chicago), in his *Review for the Two-Year Period 1944-46,* stated that the Fund, since its founding in 1917, had spent $20,120,382 on (1) the education of teachers, both Negro and white, for service in the rural schools of the South; (2) scholarship awards to Negroes and white Southerners of special promise; and (3) programs of race relations. During the period 1944-1946 the Fund spent $1,308,576, and of this amount $662,422 was spent through its Division of Race Relations. The Fund provided for the publication of *A Monthly Summary of Events and Trends in Race Relations,* compiled by the Institute for Social Science, Fisk University, and distributed 57,000 books and pamphlets, including *American Negroes, To Stem This Tide, Race and Rumors of Race, Brown Americans, Races of Mankind, Negro in America, Race Relations in Chicago,* and *Race Relations Balance Sheet.*

PHELPS-STOKES FUND

Dr. Jackson Davis, a Virginian who has been connected for 25 years with the General Education Board, was elected president of the Phelps-Stokes Fund (New York) to succeed the Rev. Dr. Anson Phelps Stokes. Dr. Davis was for over 15 years General Field Agent of the General Education Board and is Associate Director of the Board. Dr. Channing H. Tobias, outstanding Negro leader and senior secretary of the Department of Interracial Services of the YMCA, was elected director, to succeed Dr. Thomas Jesse Jones. He is believed to be the first American Negro to be elected the head of a national, educational or philanthropic organization other than those composed mainly or exclusively of Negroes.

LIBRARIES

By Mary C. Tuomey
American Library Association

POST-WAR PLANNING

The interest created in books and libraries continued to increase during the first post-war year. Veterans sought the aid of libraries to inform themselves of developments during the war years—vocational and educational opportunities. The expanded adult education movement influenced trends in library service, and the continuing interest in international cultural exchange intensified the importance of international library relations.

At the June 21, 1946 meeting of the American Library Association Council, a tentative draft of "A National Plan for Public Library Service," prepared by the Committee on Post-war Planning, by Carleton B. Joeckel. chairman, was unanimously approved in principle. This survey of the place of the public library in the American scene, completed after several years of study by members of the Committee, will be published in the spring of 1947. It proposes a realistic plan for the development of library services which will reach all the people of the United States. In its effects, it may be the most significant of all publications of the American Library Association.

Library planning on a state level increased during the year. Commissions studied existing library conditions as a basis for statewide library service in New York, Ohio, Connecticut, and Indiana.

RELATIONS WITH FEDERAL AGENCIES

The Library Development Fund ended its intensive drive for money to support a national legislative program for libraries on June 22, 1946, at the American Library Association's Buffalo Conference, with a total of $88,639. This fund, which was contributed by over 8,000 librarians, trustees, and friends of the library, makes possible the operation of the ALA National Relations Office and its supporting public relations program for four years. The office at 1709 M Street, N. W., Washington, D. C., is under the direction of Paul Howard.

The National Relations program was organized to provide a channel between Washington and the library network, comprising thousands of units in schools, colleges, municipal and state areas throughout the country. Federal relations committees were organized in 44 states to support and interpret the program on state and local levels.

Throughout 1946, the ALA National Relations Office worked with other educational and governmental agencies in support of various pieces of Federal legislation which would "advance and protect the interests of libraries and of the people who use libraries." Legislation of benefit to libraries includes the following:

(1) Libraries have been specifically included among educational institutions eligible to receive surplus property. Under Surplus Property Regulation 14, libraries were ruled eligible for surplus property from three sources: (a) reserves set aside by disposal agencies for state and municipal governments; (b) reserves set aside for certified eligible educational institutions from estimates submitted to R. F. C. by the Office of Education; and (c) from competitive sales.

(2) Public Law 697, signed Aug. 8, 1946 by President Truman, provided temporary housing for educational facilities, including libraries, in institutions carrying on a training program for veterans.

(3) The Army Map Service distributed valuable map collections to approximately 150 libraries.

(4) Regulations providing for the transfer of surplus camp libraries were put into effect. These libraries will be used to extend library service in rural areas. During the year, one library from an Arkansas relocation center was transferred to a state library agency.

The National Relations Office supported the Kilgore Bill which sought to establish a national science foundation, expressed interest in social security legislation and obtained concessions for libraries in legislation which sought to increase postal rates on books.

The Public Library Service Demonstration Bill was introduced into the Senate by Lister Hill of Alabama and in the House by Emily Taft Douglas of Illinois. The bill was approved by subcommittees of both House and Senate and by the full Senate Committee on Education and Labor. The bill will be reintroduced at the session of the 80th Congress. As presented, it calls for annual appropriations of $25,000 for four years to any state with an authorized library administrative agency which establishes policies and methods for utilizing the funds to maximum advantage. Additional funds would be used for demonstrations of library service in areas without an established library program, to improve existing conditions. Federal grants would be discontinued when the service's claim on local and state tax support had been demonstrated.

INTERNATIONAL LIBRARY ACTIVITIES

Since the close of the Second World War, American libraries have helped to replenish European and Asiatic libraries destroyed by war or missing because buildings were closed or staffs disbanded.

Correspondence and surveys of foreign libraries throughout the year indicated the extent of destruction of books and other library materials wrought by the war. Polish libraries will have to start nearly afresh. The University of Louvain in Belgium saved only five of its 571 incunabula and two of all its manuscript codexes, while even Switzerland reported a critical shortage of books.

The Rockefeller Foundation has been active in recent years in connection with the restocking of these European libraries. Substantial grants were made to the International Relations Board of the American Library Association to enable it to accumulate important American scientific, scholarly, and literary publications published in the United States since 1939 for distribution to libraries in war areas; to the Social Science Research Council to build up collections of materials in that field for use of important centers of research in social sciences; to the Committee for the Rehabilitation of Polish Science and Learning to purchase sets of approximately 1,000 books each for ten leading Polish libraries, and other grants to meet special needs, such as, purchase of books for the study of American literature at the University of Oslo.

To answer the need for periodicals published during the war, 5,600 separate sets of 367 periodicals published in the United States from 1939 to 1943 have been shipped to 14 countries. Thirty-five sets of about 750 books of the same years and additional sets of 175 published in 1944, have been sent to 25 countries. These are chiefly the books and periodicals purchased with Rockefeller Foundation funds by the Committee on Aid to Libraries in War Areas. Recent reports of the eagerness of people in allied and enemy countries to see the output of American publishers during the war indicate the goodwill fostered by these shipments.

AMERICAN BOOKS IN LATIN AMERICA

With the inauguration of the Good Neighbor Policy toward Latin America came a great expansion of the use by the United States Government of books as cultural emissaries in foreign countries. Cultural institutes were established or assisted in many Latin American cities. Books were sent as gifts to Latin American libraries, many of which were translated into Spanish or Portuguese. The American Library Association continued to administer libraries in the capital cities of Mexico, Nicaragua, and Uruguay with funds provided by the Department of State.

Library of Congress and ALA representatives participated in the establishment in Peru of a national library association called the Associasion de Bibliotecarios del Peru. Dr. Luther H. Evans, Librarian of Congress, made a formal presentation of about 15,000 volumes to the Peruvian library from the United States Government and from individual friends of Peru to help restore collections destroyed by the fire of May, 1943.

ACTIVITIES OF THE AMERICAN BOOK CENTER

The American Book Center for War Devastated Libraries now functions as the agency for distribution of scholarly publications to libraries of devastated or isolated foreign areas. Expecting to handle from 1,000,000 to 3,000,000 volumes of printed materials in all, the Center has shipped approximately 500,000 volumes overseas from the time of its inception to the present. UNRRA has shipped thousands of cases of books for the Center, the Library of Congress has contributed space for its activities, and the following groups have contributed to the Center's operating budget: the A. F. L., the C. I. O., General Motors. Book-of-the-Month Club, Belgian American Education Association, Belgian War Relief, Church Committee for Relief of Asia, American Relief for Holland, United Yugoslav Relief American Relief for Norway, United China Relief, American Friends Service, Greek War Relief Association Inc., Friends of Luxembourg, Chinese Government, Rockefeller Foundation American Relief for Italy, American Relief for Poland.

U. S. OFFICE OF INFORMATION AND CULTURAL COOPERATION

With the closing of the Office of War Information, many of its information activities were transferred to the U. S. State Department's Office of Information and Cultural Cooperation. This department soon expects to have 86 information libraries in foreign countries and hundreds of smaller collections in the offices of information specialists and cultural attaches. It is now cooperating with the War Department in making some publications available to the peoples of occupied countries. The American Information Center in Belgrade was closed by the Yugoslavian government in the fall of 1946, but reopened later with the permission of the government.

The campaign for funds for continuing operation of the American Library in Paris nears completion. The campaign was under the direction of Mrs. Richard E. Myers, who serves as executive secretary in the New York office of the American Library in Paris, at 420 Lexington Avenue, New York 17, New York.

IMPORTANCE OF BOOKS IN INTERNATIONAL RELATIONS

The importance of libraries in international relations was evidenced by their importance in the program of the United Nations Educational, Scientific and Cultural Organization. Luther H. Evans and Verner Clapp of the Library of Congress and Ralph Shaw, librarian of the U. S. Department of Agriculture, were among the consultants who took part in the preliminary conferences in Paris. In November, Carl H. Milam, executive secretary of the ALA, went to Paris to serve as technical adviser on library matters to the American delegation.

Three projects in full operation have been the Books for Latin America projects of 1944, 1945 and 1946. As a result of these, some 5,573 volumes of American books and periodicals have been shipped to Latin American countries.

Flora B. Ludington resigned from her post as librarian of the American Information Library in Bombay in the spring and was succeeded by Wayne M. Hartwell. Both Miss Ludington and Hartwell attended the All-India Library Conference held in Baroda, late in January. India sent an educational liaison officer to the United States during 1946 to bring about closer relations between libraries of the United States and India.

The King Christian X "Medal of the Liberation" was awarded by the government of Denmark in August, to Miss Dorothy Comins, ALA International Relations Office, for aid to Denmark during the war.

OPPORTUNITIES FOR INTERCHANGE OF IDEAS

International conferences and government missions gave many American librarians the opportunity for interchange of ideas with foreign colleagues. Ralph Ulveling, director of the Detroit Public Library, made a quick survey of library service for the armed forces in Europe at the request of the theater commander and the War Department. Leon Carnovsky, professor of library science at the University of Chicago, was one of an advisory delegation sent to Japan to consult on re-education of the Japanese people. Many Latin American librarians, as well as some from England, China, India, and other countries visited North American libraries during the year.

STATE AND LOCAL DEVELOPMENT

Appropriations for state library agencies and for state aid to public libraries showed material increases throughout the year. Georgia included an additional $50,000 in the Department of Education budget for state aid for rural library service. In Louisiana, aid was increased by $50,000 for the biennium 1946-1948; Maryland received its first appropriation of $20,000 for 1946-1947 as aid to county libraries; New York State increased by $2,000, for the year 1946-1947, annual aid to registered libraries which meet standards set by the regents.

During 1946, Missouri passed legislation which abolished the Missouri Library Commission and created in its place, the Missouri State Library in the State Department of Education. On Oct. 15, a bill appropriating approximately $212,000 in support of this bill was signed by the governor of Missouri. State aid will be allocated under the following provisions according to the new act: 50 per cent of all moneys appropriated will be allocated to tax-supported public libraries on a per capita basis. The remaining 50 per cent will be allocated to county and regional libraries as an establishment grant to newly created county and regional libraries and as an equalization grant to county and regional libraries.

Four Canadian provinces reported progress. British Columbia increased by $4,000 the general grants-in-aid; Ontario voted $105,000 for grants to free public libraries. Grants are based on (a) certification (now formally adopted by the province) and (b) local municipal appropriations giving advantage to those which meet standards of support and service made under the 1946 Public Libraries Act.

Saskatchewan appropriated $6,000 for 1946 for small grants to public libraries and mechanics institutes. The 1946 Regional Library Act granted an appropriation of $5,000 for a regional library supervisor and additional funds for the organization of a regional library demonstration and for a school library supervisor, as well as three $600 scholarships for library training annually.

Several states were still using funds appropriated for the biennium 1945-1947. No state or province reduced its appropriation for its library extension agency or for state aid.

County and regional libraries increased from 725 to 808 during the year. Twenty-six per cent of the entire population is still, however, without library service.

Arizona is now the only state without a library extension agency, while Idaho is the only state which lacks legal provision for county or regional library service.

ADULT EDUCATION

Impetus for adult education gained momentum throughout the year. Five organizations, American Association for Adult Education, National Education Association, American Library Association, Educational Film Association and the National University Extension Division participated in an adult education conference in Detroit in the spring. It marked, according to Mortimer J. Adler of the University of Chicago, the beginning of real exploration of the possibilities of adult education. The five associations agreed to form a joint committee to define principles, policies and practices. Subject fields will be examined one at a time.

Public library interest in building up film libraries and in promoting film use increased. A limited number of public libraries are using films as an integral part of the library's collection of materials. Opinion polls of librarians returning from military service and of several hundred library trustees showed that both these groups believe that public as well as school and college libraries, must accept films as an important educational tool, because of their unique success in military and industrial training. (See "Adult Education," p. 1032.)

LIBRARY SERVICE FOR BUSINESS AND INDUSTRY

The past year saw a great increase in awareness by business of its needs for factual information and in its growing interest in broad community welfare. Late in the year, the American Library Association and several other national library and business groups held joint meetings in Chicago. Illinois, and York, Penn., to explore the possibilities of regional library service to small business and industry. Detroit, Cleveland, Chicago, Indianapolis, and Newark libraries were among the most active in according library service to business.

LIBRARY TRAINING

Throughout 1946, the library profession turned more intensive attention to the progress of libraries in the future and, consequently, to their needs in personnel. The prevailing shortage of librarians appeared to some professional leaders to be a problem which necessitated drastic changes in the present plan of library education.

Basic problems which the library profession faces today are (1) to identify and define professional and borderline professional work in libraries and (2) to determine the education, both general and in the library field. which each type of work requires Joseph L. Wheeler's *Progress and Problems in Education for Librarianship,* prepared at the request of the Carnegie Corporation of New York. intensified the thinking of many librarians on the questions it raised or implied.

Most library schools are engaged in the study of important educational questions or working toward a revision of curricula. A new curriculum became effective at Louisiana in the summer of 1946, which allowed a more flexible program for library students. Columbia continued conferences with consultants and intensive work by the faculty in the revision of basic and specialized programs, and issued a special report, *Education for Librarianship,* by J. Periam Danton.

Special arrangements to admit veterans in the mid-year were effective at Columbia, Denver, Emory, Illinois, North Carolina, and Western Reserve Library Schools. Adjustments in programs to meet individual needs were made possible at other library schools. New scholarships were announced at the University of Minnesota and Drexel Institute, the latter to be awarded to students training for work in special libraries.

Enrollments in the 34 accredited library schools again showed an increase over the preceding year with the prospect of a return to normal numbers of students in 1946-1947; 1,499 students were enrolled in 1946 as compared to 1,032 for the previous year. In the two Canadian library schools, 61 students were enrolled in 1945-1946, an increase of one-third. Admissions at some library schools were affected by the current housing shortage and the unprecedented number of applicants in all university departments.

New directors took office at the library schools of Atlanta University, University of Washington, University of California, University of Kentucky, Simmons College, and College of William and Mary.

In June, 1946, the ALA Board of Education for Librarianship accredited two Type III library schools—New York State Teachers College, Geneseo, N. Y., Department of Library Education, which emphasizes preparation for school library work, and Marywood College, Department of Librarianship, Scranton, Penn.

A few states, notably Massachusetts, made progress toward securing legal certification for librarians, but no laws were enacted. In British Columbia, a system of certification for librarians was put into effect under the law passed in 1944.

The return to more normal travel conditions in 1946 had an immediate effect on in-service training. Many library schools and state library extension agencies resumed or extended their in-service training programs.

Among the library schools, New York State College for Teachers at Albany was responsible for organizing an institute on intergroup education and the library. New York State Teachers College at Geneseo held its annual institute for school librarians in service. A summer refresher course was held at the University of Toronto. The Library School of the University of Denver joined the Colorado Agricultural College in sponsoring the Rocky Mountain Rural Library Institute. Western Reserve University, with the Ohio State Library, conducted an institute for librarians in service. The Graduate Library School, University of Chicago devoted its annual summer institute to the planning of library buildings. Library associations and state library extension agencies in Michigan, New York, Vermont and Wisconsin also continued institutes and workshops.

PERSONNEL PROBLEMS

Personnel problems were given consideration by several state and provincial library associations throughout the year. The New Jersey Library Association increased the salary schedules for its classification and pay plans by 33 1/3 per cent for all but the highest grade of professional service, for which 25 per cent was recommended. The North Carolina Library Association issued suggested *Personnel and Working Specifications for North Carolina Libraries,* and the British Columbia Library Association, *Personnel Specifications for Library Positions.*

Increases in salary were adopted in Classification and Pay Plans by the Civil Service Commission and Public Libraries in Akron, O.; Chicago; Des Moines, Ia.; Indianapolis, Ind.; Kansas City, Mo.; Milwaukee, Wis., and the New York and Michigan state libraries.

In its efforts to raise salaries, the ALA Board of Personnel Administration issued a Salary Policy Statement, adopted by the ALA Council in June, 1946, which raised the national standard minimum salary for professional librarians to $2,100. *The Classification and Pay Plans for Municipal Public Libraries* and *The Classification and Pay Plans for Libraries in Institutions of Higher Education,* both ALA publications, were revised to meet new salary schedules. The ALA Council also adopted a statement on tenure applying to professional members of library staffs. A statement of tenure principles for non-professional personnel is expected in 1947.

GIFTS, GRANTS AND BUILDINGS

Book collections and monetary gifts to purchase books increased the resources of libraries during the year. Among these were: $1,500,000 from Thomas W. Lamont to establish the first undergraduate library at Harvard University; a $100,000 trust fund for the Youngstown Public Library, Youngstown, O., given by Justice John H. Clarke. Income from the bequest will be used to purchase books. The Library Association of Portland, Ore. will receive $2,400 a year from a trust fund established by Thomas Roberts. A $25,000 bequest trust fund was left by Mrs. Lena D. Hesse to the Milwaukee Public Library, Milwaukee, Wis. The Public Library, Monteguina, Ind. received approximately 1,000 volumes from the estate of the late Lula J. Case; this gift also included a collection of famous paintings. The Macalester College Library received nearly 1,000 volumes on American hymnology, the greatest collection of such materials in the United States.

Among smaller gifts were a bequest of $1,500 to the Greenfield Public Library, Greenfield, Ia. from Mrs. Celia F. Holcomb; $1,000 to the Clarksville Public Library, Clarksville, Ia. by R. L. Slimmer; a bequest of $1,000 to the Washington Public Library, Washington, Ia. by Dr. Ludwig Simon; $3,000 to the Bangor Public Library, Bangor, Me. from the estate of Louise Baldwin Thompson; $3,000 bequeathed to the Lynn Public Library, Lynn, Mass. under the will of Walter O. Faulkner, trustee of the library for over 50 years; a $2,500 endowment fund to the Public Library, Waupum, Wis. from the estate of Betty Kennedy.

Gifts of money and funds for library building included $3,700 from the estate of Lucy Rising Rocks bequeathed to Wyoming, Ia. to establish and maintain a library; $4,800 from the A. J. Cross estate bequeathed to Shenandoah, Ia. to be used with the building fund; $10,000 left by Mrs. Mattie Utting to Dodgeville, Wis. to help erect a library building. Over $90,000 left by H. E. Swen to Kahoka, Mo. for the construction of an H. E. Swen Memorial Library to serve Kahoka and Clarke counties. The sum of $25,000 has been given by various donors to Indianola, Miss. for a public library. The Baldwin-Wallace College received a gift of $152,000 from George W. Ritter, an alumnus of the college, for the construction of a modern library building.

Numerous plans are being made for the construction of new library buildings as soon as materials are available. Undoubtedly, the next few years will see an unprecedented growth in modern library building along the lines of the long-range master plan developed and approved by the Detroit Library Commission for that city. Plans made for large construction of library buildings during the war, in most instances, are being delayed by shortages of materials.

AMERICAN LIBRARY ASSOCIATION

Officers for the year 1946-1947: Mary U. Rothrock, Tennessee Valley Authority, president; Paul North Rice, New York Public Library, first vice-president and president-elect; Nell Avery Unger, Library Association of Portland, Portland, Ore., second vice-president; Rudolph H. Gjelsness, University of Michigan, treasurer.

The American Library Association is an international organization, composed of 15,000 librarians, library trustees, and friends of libraries. It was organized in 1876 to promote the foundation and improvement of libraries in the United States and Canada. In June, 1946, the ALA transferred headquarters to 50 East Huron Street, once the home of Cyrus H. McCormick. An International Relations Office is maintained in the Library of Congress Annex, Washington 25, D. C., with Marion A. Milczewski, director. The Association's National Relations Office is located at 1709 M Street, N. W., Washington 6, D. C.

1946 saw the first ALA midwinter and summer conferences since travel restrictions were enforced in 1942. The midwinter conference was held in Chicago while the Association's 65th annual conference drew 2,500 delegates to the Memorial Auditorium, Buffalo, N. Y.

ANNUAL AWARDS

The annual citations for distinguished service as library trustees were awarded to James J. Weadock, Jr., vice-president of the Board of Trustees of the Lima Public Library, Lima, O., and Mrs. Myrtle J. Price of Tuscaloosa, Ala., chairman, of the Alabama Public Library Service Division. The 25th annual Newbery Medal was awarded to Lois Lenski for *Strawberry Girl,* judged to be the outstanding contribution to children's literature in 1945. The 10th annual Caldecott Medal for the most distinguished picture book was conferred upon Maud and Miska Petersham for *The Rooster Crows,* a book of American rhymes and jingles.

PUBLICATIONS

Five periodicals are published by the American Library Association: *ALA Bulletin, Booklist, Subscription Books Bulletin, College and Research Libraries,* and *Hospital Book Guide.*

Among 1946 publications of other

agencies were: Marian C. Manley, *Library Service in Business, Its Place in the Small City; College and University Librarians and Librarianship* (Library Planning Document in the College Field); Mary A. Sweeeny, *Rehabilitation Materials on Today's Problems for Veterans and Civilians;* Dorothea M. Singer, *Insurance of Libraries;* Cincinnati Public Library Staff, *Books for Adult Beginners;* Sidney Ditzion, *Arsenals of a Democratic Culture; A Social History of the American Public Library Movement in New England and the Middle States, 1850-1900.*

Other publications in the library field were: Pierce Butler, *Books and Libraries in Wartime,* University of Chicago Press, 1945; *Library Extension,* University of Chicago Press, 1946; *General Education in a Free Society: Report of the Harvard Committee,* Harvard University Press, 1945; Carleton B. Joeckel, *Library Extension Problems and Solutions,* University of Chicago Press, 1946; Edward Wight, *Evaluation and Revision of the Library School Curriculum,* Peabody Press, 1945; Louis R. Wilson and Maurice F. Tauber, *The University Library: Its Organization, Administration and Functions,* University of Chicago Press, 1945.

PERIODICAL PUBLICATIONS

Adult Education Journal
525 West 120th Street, New York City.

American School Board Journal
Bruce Publishing Company, 540 North Milwaukee Street, Milwaukee, Wis.

American Teacher
506 South Wabash Ave., Chicago.

Business Education World
270 Madison Ave., New York City.

Child Study
221 West 57th Street, New York City.

Clearing House
Inor Publishing Company, Inc., 207 Fourth Avenue, New York City.

College and Research Libraries
American Library Association, 520 N. Michigan Ave., Chicago, Ill.

Education
370 Atlantic Ave., Boston.

Education Abstracts
1201 Bluff St., Fulton, Mo.

Educational Administration and Supervision
Warwick and York, Inc., Baltimore, Md.

Educational Method
1201 Sixteenth Street, N.W., Washington, D. C.

Educational Record
744 Jackson Place, Washington, D. C.

Harvard Educational Review
Harvard Graduate School of Education, Cambridge, Mass.

Industrial Arts and Vocational Education
540 N. Milwaukee St., Milwaukee, Wis.

International Journal of Religious Education
203 North Wabash Ave., Chicago.

Journal of Business Education
512 Brooks Building, Wilkesbarre, Pa.

Journal of Education
6 Park Street, Boston.

Journal of Educational Psychology
10 East Centre Street, Baltimore.

Journal of Educational Sociology
32 Washington Place, New York City.

Journal of Engineering Education
Prince and Lemon Sts., Lancaster, Pa.

Journal of Experimental Education
University of Wisconsin, Madison, Wis.

Journal of Geography
3333 Elston Ave., Chicago, Ill.

Journal of Higher Education
Ohio State University, Columbus.

Journal of the National Education Association
1201 Sixteenth Street, N.W., Washington, D. C.

Journal of Negro Education
Howard University, Washington. D. C.

Journal of Physical Education
Dayton, Ohio.

Junior College Journal
730 Jackson Place, Washington, D. C.

Library Journal
62 West 45th Street, New York City.

Library Quarterly
5750 Ellis Ave., Chicago.

National Parent-Teacher
600 S. Michigan Blvd., Chicago.

Occupations Vocational Guidance Journal
82 Beaver St., New York City.

Parents' Magazine
52 Vanderbilt Ave., New York City.

Peabody Journal of Education
George Peabody College for Teachers, Nashville, Tenn.

Pitman's Journal
2 West 45th Street, New York City.

Religious Education
59 East Van Buren Street, Chicago.

School Management
52 Vanderbilt Ave., New York City.

School Review
5835 Kimback Ave., Chicago.

School and Society
Science Press, North Queen Street and McGovern Avenue, Lancaster, Pa.

Teachers College Record
Teachers College, Columbia University, New York City.

World Federation News
1201 Sixteenth Street, N.W., Washington, D. C.

COGNATE SOCIETIES AND RESEARCH INSTITUTIONS

(For further information, the reader may address the following organizations)

GENERAL

American Academy of Political and Social Science, 3457 Walnut Street, Philadelphia.

American Assn. for Adult Education, 525 W. 120th St., New York City.

American Council of Education, 744 Jackson Pl., N.W., Washington, D. C.

American Council of Learned Societies, 1219 16th St., N.W., Washington, D. C.

American Federation of Teachers, 506 S. Wabash Ave., Chicago, Ill.

Association of Land Grant Colleges and Universities, University of Kentucky, Lexington, Ky.

Association of Urban Universities, University of Pittsburgh, Pittsburgh, Pa.

Bureau of Educational Reference and Research, University of Michigan, Ann Arbor, Mich.

General Education Board, 49 W. 49th St., New York City.

National Congress of Parents and Teachers, 600 S. Michigan Blvd., Chicago, Ill.

National Council of Education, Teachers College, Columbia University, New York City.

National Education Assn. of the U. S., 1201 16th St., N.W., Washington, D. C.

National Research Council, Division of Educational Relations, 2101 Constitution Ave., N.W., Washington, D. C.

National Society for the Study of Education, 5835 Kimbark Ave., Chicago.

Public Education Assn., 20 W. 40th St., New York City.

INTERNATIONAL

Institute of International Education, 2 W. 45th St., New York City.

International Council for the Education of Exceptional Children, 3 E. 25th St., Baltimore, Md.

International Council of Religious Education, 11 W. 42nd St., New York City.

Pan-American Educational Congress, Universidad de Chile, Cosilla 2543, Santiago, Chile.

XXVII. EDUCATION

TEACHERS

American Federation of Teachers, 506 S. Wabash Ave., Chicago, Ill.
Carnegie Foundation for the Advancement of Teaching, 522 Fifth Ave., New York City.
Educators Assn., Inc., 307 Fifth Ave., New York City.
Teachers Union of the City of New York, 13 Astor Pl., New York City.

SCHOOLS

American School Citizenship League, 295 Commonwealth Ave., Boston, Mass.
Child Study Assn. of America, Inc., 221 W. 57th St., New York City.
National Assn. of High School Supervisors and Inspectors, State Department of Education, Columbus, Ohio.
National Assn. of Secondary School Principals, 1201 Sixteenth St., N.W., Washington, D. C.
National Congress of Parents and Teachers, 600 South Michigan Boulevard, Chicago, Ill.
National Kindergarten Assn., 8 W. 40th St., New York City.
Progressive Education Association, 289 Fourth Ave., New York City
Y.M.C.A. Educational Secretaries Assn., 55 Hanson Pl., Brooklyn, New York City.

COLLEGES AND UNIVERSITIES

American Alumni Council, Michigan State College, East Lansing, Mich.
American Assn. of Collegiate Registrars, George Peabody College for Teachers, Nashville, Tenn.
American Assn. of Junior Colleges, 1201 Nineteenth Street, Washington, D. C.
American Assn. of University Professors, 1155 16th St., N.W., Washington, D. C.
American Assn. of University Women, 1634 I St., N.W., Washington, D. C.
Association of American Colleges, 19 W. 44th St., New York City.
Association of American Universities, Yale University, New Haven.
Association of Colleges for Negro Youth, Fisk University, Nashville, Tenn.
Association of Land Grant Colleges and Universities, c/o Experiment Station, Lexington, Ky.
College Entrance Examination Board, 425 W. 117th St., New York City.
National Assn. of State Universities, University of Kansas, Lawrence, Kansas.
National University Extension Assn., Indiana University, Bloomington, Ind.
New England Assn. of Colleges and Secondary Schools, Tufts College, Medford, Mass.
Phi Beta Kappa, United Chapters of, 5 E. 44th St., New York City.
Sigma Phi Society, 149 Broadway, New York City.

PROFESSIONAL EDUCATION

American Assn. of Teachers Colleges, State Normal School, Oneonta, New York.
American Educational Research Association, Teachers College, Columbia University, New York City.
American Medical Assn., Council on Medical Education and Hospitals, 535 N. Dearborn St., Chicago, Ill.
Association of American Law Schools, Ohio State University, Columbus, Ohio.
Association of American Medical Colleges, 5 S. Wabash Ave., Chicago, Ill.
Section of Legal Education, American Bar Assn., 1140 N. Dearborn St., Chicago, Ill.
Society for the Promotion of Engineering Education, University of Pittsburgh, Pittsburgh, Pa.

SPECIAL EDUCATION

American Association of Instructors of the Blind, Michigan School for the Blind, Lansing, Mich.
American Assn. to Promote Teaching of Speech to the Deaf, School for the Deaf, 1537 Thirty-fifth St., N.W., Washington, D. C.
American Humane Education Society, 180 Longwood Ave., Boston, Mass.

AMERICAN PHYSICAL EDUCATION ASSN., 311 Maynard St., Ann Arbor, Mich.

ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT, COMMITTEE ON ENGINEERING SCHOOLS, 29 West 39th Street, New York City.

NATIONAL ASSN. OF THE DEAF, 3633 E. Tremont Ave., New York City.

NATIONAL SOCIETY OF CRIPPLED CHILDREN OF U.S.A., Masonic Building, Elyria, O.

RELIGIOUS EDUCATION ASSOCIATION, 59 East Van Buren Street, Chicago, Ill.

VOCATIONAL

AMERICAN ASSN. FOR THE ADVANCEMENT OF AGRICULTURAL TEACHING, Iowa State College, Ames, Ia.

AMERICAN HOME ECONOMICS ASSN., 620 Mills Bldg., Washington, D. C.

AMERICAN VOCATIONAL ASSOCIATION, 1010 Vermont Ave., N.W., Washington, D. C.

NATIONAL VOCATIONAL GUIDANCE ASSN., 82 Beaver Street, New York City.

WORKERS EDUCATIONAL BUREAU OF AMERICA, Machinists Bldg., Washington, D. C.

LIBRARIES

AMERICAN ASSOCIATION OF LAW LIBRARIES, Library of the Supreme Court of the U. S., Washington 25, D. C.

AMERICAN LIBRARY ASSOCIATION, 520 North Michigan Avenue, Chicago, Ill.

ASSOCIATION OF RESEARCH LIBRARIES, The New York Public Library, 476 Fifth Avenue, New York City.

SPECIAL LIBRARIES ASSOCIATION, 31 East 10th Street, New York City.

NOTE: For additional educational societies consult U. S. OFFICE OF EDUCATION, Washington, D. C.

NECROLOGY FOR 1946

Adams, Dr. Joseph Quincy, director of the Folger Shakespeare Library, 65, Nov. 10.

Adler, Dr. Elkan N., British lawyer. scholar, and Hebraic historian, 85, Sept. 15.

Aishton, Richard H., former president of the Chicago & Northwestern Railroad and of the Association of American Railroads, 86, Oct. 3.

Albert, Ernest, landscape painter, 88, March 25.

Alekhine, Dr. Alexander A., world chess champion, 53, March 24.

Alexandrov, Alexander V., Russian composer of the Soviet national anthem, 52, July 8.

Allen, Sir Hugh, professor of music at Oxford and president of the Royal College of Organists, 76, Feb. 20.

Ananda Mahidol, King of Siam, 20, June 9.

Andrada, Antonio Carlos de, Brazilian statesman, 76, Jan. 2.

Andrews, Charles O., U. S. Senator (Florida), 69, Sept. 18.

Arguedas, Alcides, Bolivian statesman, historian, and novelist, 67, May 6.

Arliss, George, British stage and film actor, 77, Feb. 5.

Arosemena, Carlos C., Panamanian statesman and diplomat, 78, July 11.

Arthur, Sir George, British biographer, 86, Jan. 14.

Atwill, Lionel, stage and film actor, 61, April 22.

Ayres, Brig. Gen. Leonard P., economic statistician, 67, Oct. 29.

Bagley, Dr. William C., educator and author, 72, July 1.

Baikov, Alexander A., Russian scientist, 76, April 7.

Bailey, Major Gen. Charles J., former commander of the 81st (Wildcat) Division in the First World War, 87, Sept. 21.

Bailey, Josiah W., U. S. Senator (N. C.), 73, Dec. 15.

Bailey, Thomas L., Governor of Mississippi, 58, Nov. 2.

Baird, John L., British television pioneer, 58, June 14.

Bairstow, Sir Edward C., British organist and composer, 71, May 1.

Baker, Ray Stannard ("David Grayson"), biographer of Woodrow Wilson and philosophical essayist, 76, July 12.

Baker, Stephen, banker and philanthropist, 87, Dec. 31.

Bankes, Sir John E., British lawyer and jurist, 92, Dec. 31.

Bankhead, John H., U. S. Senator (Ala.), 73, June 12.

Bantock, Sir Granville, British composer, conductor, and teacher, 78, Oct. 16.

Barbour, Dr. Thomas, zoologist, director of the Harvard University Museum and Museum of Comparative Zoology, 61, Jan 8.

Barcelos, Gen. Christovav de C., Chief of Staff of the Brazilian Army, 62, Feb. 16.

Barry, Jeremiah H., retired Chief Justice of New Brunswick, Canada, 87, March 23.

Bartlett, Capt, Robert A., Arctic explorer, 70, April 28.

Barton, John, actor ("Tobacco Road"), 69, Dec. 23.

Bateman, Prof. Harry, mathematician, California Institute of Technology, 63, Jan. 21.

Bates, John L., former Governor of Massachusetts, 85, June 8.

Bates, Sir Percy, chairman of the Cunard White Star Line, 67, Oct. 16.

Bath, Fifth Marquess of, 83, June 9.

Batten, Rev. Dr. Loring W., former pastor of St. Marks' in the Bouwerie in New York, 86, Jan. 6.

Beard, Mary, former director of the American Red Cross Nursing Service, 70, Dec. 4.

Beattie, Sir John C., Scottish-born South African scientist and educator, 80, Sept. 10.

Beckwith, Dr. Theodore D., bacteriologist, 66, July 18.

Beery, Noah, motion picture actor, 62, April 1.

Beling, Dr. Christopher C., specialist in psychiatry and neurology, 76, Nov. 30.

Benjamin, Greek Orthodox Patriarch, Feb. 18.

Berl, Dr. Ernst, Austrian chemical engineer and explosives expert, 68, Feb. 16.

Berman, Dr. Louis, endocrinologist, 53, May 16.

Bernadotte, Princess, wife of Oscar, Prince Bernadotte, brother of the King of Sweden, 87, Oct. 16.

Betts, Brig. Gen. Edward C., Judge Advocate General of American Forces in Europe, 56, May 6.

Bindloss, Harold, British novelist, 79, Jan. 1.

Bliss, Dr. Collins P., dean emeritus of the New York University College of Engineering, 80, Dec. 27.

Blomberg, Gen. Werner von, German Field Marshal, 67, March 13.

Blum, Edward C., Brooklyn merchant, cultural leader, and philanthropist, 83, Nov. 20.

Boardman, Mabel T., former National Secretary, American Red Cross, March 17.

Boetto, Pietro, Cardinal, Archbishop of Genoa, 74, Jan. 31.

Bogomolets, Dr. Alexander A., Russian scientist and president of the Ukrainian Academy of Sciences, 65, July 19.

Bowes, Major Edward, radio figure and motion picture executive, 72, June 13.

Boyd, Ernest, Irish-born literary critic, 59, Dec. 30.

Boynton, Prof. Percy H., former dean of the College of Arts and Sciences, University of Chicago, 70, July 8.

Brainard, Brig. Gen. David L., member of the Greely Arctic Expedition of 1880-84, 89, March 22.

Brandt, Sophie (Mrs. William Burlock), actress and singer, 50, Feb. 4.

Brecher, Egon, Viennese stage and film actor, 66, Aug. 12.

Brewster, Elisha H., Federal jurist, 74, April 29.

Bristol, Edward N., book publisher, 85, March 2.

Britten, Fred A., former Representative in Congress (Ill.), 74, May 4.

Brooke, Prof. C. F. Tucker, Shakespearean scholar, 63, June 22.

Brooks, Major Allan, ornithologist and illustrator, 76, Jan. 3.

Brown, George M., Canadian-Scottish publisher and former M. P., 76, July 14.

Brown, Lady (Lilian Roussel), British explorer, 63, Oct. 4.

Brown, Nelson P., Massachusetts jurist, 67, April 9.

Browne, George E., artist, 75, July 13.

Bru, Col. Federico Laredo, former President of Cuba, 71, July 7.

Bruce, William Cabell, former U. S. Senator (Md.), 86, May 9.

Bruce-Winston, Charles, British actor, producer, and scene designer, 67, Sept. 27.

Brunswick, Dr. Ruth M., psychoanalyst and psychiatrist, 47, Jan. 24.

Buckland, Dr. W. W., president of Gonville and Caius College, University of Cambridge, and civil law authority, 87, Jan. 16.

Budd, Edward G., industrialist and pioneer in stainless-steel products, 75, Nov. 30.

Buell, Raymond Leslie, author and former president of the Foreign Policy Association, 49, Feb. 20.

Burdenko, Lieut. Gen. Nikolai N., chief surgeon of the Russian armed forces and medical research worker, 68, Nov. 12.

Burdick, Dr. William L., former dean of the Law School, University of Kansas, 86, June 11.

Burgin, William O., Representative in Congress (N. C.), 57, April 11.

Burkhart, Dr. Harvey J., dental surgeon and director of the Eastman Dental Foundation, 85, Sept. 22.

Burroughs, Harry E., founder of the Burroughs Newsboys' Foundation of Boston, 56, Dec. 18.

Butler, Mary, artist and former president of the Philadelphia Academy of Fine Arts, 81, March 16.

Butterworth, Charles, film comedian, 49, June 13.

Caballero, Francisco Largo, former premier of the former Spanish Republic, 76, March 23.

Cadman, Charles W., composer of popular music, 65, Dec. 30.

Callender, Sir Geoffrey A., British naval historian, 71, Nov. 6.

Calza, Dr. Guido, Italian archaeologist, 58, April 17.

Cameron, Charlotte, British explorer, lecturer, and author, Dec. 11.

Carnegie, Mrs. Louise Whitfield, widow of Andrew Carnegie, 89, June 24.

Carr, Alexander ("Perlmutter"), stage and film comedian, 68, Sept. 19.

Cartier de Marchienne, Baron de, Belgian diplomat, 74, May 10.

Cartotto, Ercole, portrait painter, 57, Oct. 3.

Case, Frank, hotel host and author, 76, June 7.

Caso, Dr. Antonio, Mexican diplomat and rector of the National University (Mex.), 59, March 6.

Castillo, Dr. Antonio J., Venezuelan physician and educator, Jan. 18.

Castner, Major Gen. Joseph C., First World War veteran, 77, July 8.

Castro, Leon Cortes, former president of Costa Rica, 63, March 3.

Cavan, Tenth Earl of, British Field Marshal and former Chief of the Imperial General Staff, 80, Aug. 28.

Chanler, Beatrice Ashley, actress, sculptress, and author, June 19.

Chapais, Sir A. J. Thomas, Canadian political leader and historian, 88, July 15.

Cheatham, Catharine Smiley (Kitty), diseuse, 81, Jan. 5.

Clapham, Sir John, British educator and economics historian, 72, March 29.

Clark, John C., New York jurist and former president of the State Civil Service Commission, 83, June 27.

Clayton, Dr. Edward H., Baptist educational missionary in China, 59, Nov. 17.

Clayton, Henry H., meteorologist, 85, Oct. 27.

Clerk, Ira, president of the Federal Reserve Bank of San Francisco, 61, Sept. 28.

Cohalan, Daniel F., former New York jurist, 81, Nov. 12.

Colton, John B., playwright, 60, Dec. 28.

Cooper, Frank, retired Federal jurist (N. Y.), 77, July 16.

Cowles, Gardner, Iowa newspaper publisher, 85, Feb. 28.

Cowles, William H., newspaper publisher of the Pacific Northwest, 79, Jan. 15.

Cox, John I., former Governor of Tennessee, 90, Sept. 5.

Coxen, Sir William G., former Lord Mayor of London, 79, April 7.

Crist, Harris Mc C., former managing editor and vice president of the *Brooklyn Eagle*, 71, Jan. 19.

Cron, Herman, big-game hunter and photographer, 61, Nov. 23.

Crowe, Frank T., structural engineer, 63, Feb. 26.

Cullen, Countee, Negro poet, 42, Jan. 9.

Cummins, Rev. Dr. Alexander G., liberal leader in the Episcopal Church, 77, Sept. 22.

Cunliffe, Dr. John W., director emeritus, Graduate School of Journalism, Columbia University, 81, March 18.

Cunningham, Benjamin B., New York jurist, 71, Jan. 2.

Currier, Thomas F., former Associate Librarian of the Widener Library at Harvard University, 73, Sept. 14.

Curry, John Steuart, Midwestern mural painter, 48, Aug. 29.

Cutting, Elizabeth B., editor and author, 75, Aug. 13.

Dandy, Dr. Walter E., neurological surgeon, 60, April 19.

Davey, Martin L., former Governor of Ohio, 61, March 31.

Dealey, George B., dean of American newspaper publishers, 86, Feb. 26.

Desai, Bhulabhai J., Indian lawyer and chief lieutenant of Mahatma Gandhi, 68, May 5.

De Vries, Maurits, Dutch playwright, 60, Nov. 30.

Dewart, William T., publisher of the *New York Sun*, 36, Jan. 3.

Diamantopoulos, Cimon, Greek Ambassador to the United States, 59, Dec. 6.

Didur, Adamo, Polish operatic basso, 71, Jan. 7.

Dilnot, Frank, British author and journalist, 71, July 28.

Dion, Marquis Albert de, French automobile pioneer, 90, Aug. 20.

Dixon, Thomas, clergyman and novelist, 82, April 3.

Donahey, Alvin Victor, former Governor of Ohio, 72, April 8.

Dorey, Major Gen. Halstead, veteran of the First World War, 72, June 19.

Douglas, Edward B., sculptor, 60, Feb. 6.

Dove, Arthur G., pioneer American abstractionist artist, 66, Nov. 23.

Drummond-Hay, Lady, British journalist and aviatress, 50, Feb. 12.

Duke, Dr. William W., pioneer in allergy research, 63, April 10.

Dumesnil, Vice Admiral Charles, former commander of the French Mediterranean Fleet, 78, Dec. 29.

Dunhill, Thomas F., composer and music educator, 69, March 13.

Dunsterville, Major Gen. Lionel C., British soldier and the original of Kipling's Stalky, 80, March 17.

Eagleton, Dr. Wells P., specialist in brain, eye, and ear surgery, and medical author, 81, Sept. 11.

Eby, Kerr, artist and etcher of war scenes, 57, Nov. 18.

Eisenhower, Mrs. Ida Stover, mother of Gen. Dwight D. Eisenhower, 84, Sept. 11.

Elder, Sir James, former Australian Commissioner in the United States, 76, May 30.

Ellwood, Dr. Charles A., sociologist, 73, Sept. 25.

Eppinger, Dr. Hans, Viennese surgeon, 66, Sept. 25.

Erickson, John E., former Governor of Montana, 83, May 25.

Eulogius, Metropolitan, Archbishop of the Russian Orthodox Church in Paris, 78, Aug. 8.

Eustis, Mrs. Dorothy H., founder and former president of The Seeing Eye, Inc., 60, Sept. 8.

Falbo, Dr. Italo Carlo, editor of *Il Progresso Italo-Americano* (N. Y.), 69, Feb. 18.

Falk, Maurice, steel industrialist and philanthropist, 79, March 18.

Fangen, Ronald, Norwegian dramatist and novelist, 51, May 22.

Ferguson, G. Howard, former Canadian High Commissioner to the United Kingdom, 76, Feb. 21.

Fields, W. C. (Claude W. Dukenfield), film comedian, 66, Dec. 25.

Flanders, Annette Hoyt, landscape architect, 57, June 7.

Fleisher, B. W., former publisher of *The Japan Advertiser,* in Tokyo, 76, April 29.

Fleming, Bryant, landscape architect, 69, Sept. 20.

Fletcher, Dr. Jefferson B., Columbia professor and Italian Renaissance authority, 80, Aug. 17.

Flexner, Dr. Simon, leader in medical research, organizer and director of the Rockefeller Institute of Medical Research, 83, May 2.

Fontenay, Vicomte de, French diplomat, 82, March 27.

Ford, Sewell, author of "Torchy" and "Shorty McCabe" stories, 78, Oct. 26.

Foster, Manuel, former Foreign Minister of Chile, 82, June 11.

Foust, Dr. Julius I., president emeritus of the Woman's College, University of North Carolina, 80, Feb. 15.

Fremont, Mrs. Sallie Anderson, widow of Admiral John C. Fremont and daughter-in-law of Gen. John C. Fremont, 90, Oct. 23.

Freund, Prof. Ernst, Austrian food chemist and nutrition authority, June 2.

Friedman, Arnold, artist, 74, Dec. 29.

Fry, John Hemming, classical painter, 85, Feb. 24.

Funk, Ross W., Ohio jurist, 85, Feb. 17.

Gag, Wanda (Mrs. Earl Humphreys), artist, author, and illustrator of children's books, 53, June 27.

Galen, Clemens August, Cardinal Count von, Bishop of Muenster, 68, March 22.

Gallagher, William J., Representative in Congress (Minn.), 71, Aug. 13.

Gardiner, Alfred G., British editor and author, 80, March 3.

Gardner, Dr. Leroy Upson, silicosis authority and director of the Saranac Laboratory and Trudeau Foundation, 57, Oct. 24.

Gasparri, Enrico Cardinal, Papal diplomat, 74, May 20.

Gates, Dr. Caleb F., former president

of Robert College, Istanbul, Turkey, 88, April 9.

Gaumont, Leon, French film pioneer, 82, Aug. 11.

Gay, Charles R., former president of the New York Stock Exchange, 70, March 23.

Gay, Dr. Edwin F., former dean of the Graduate School of Business Administration, Harvard University, 78, Feb. 8.

Ginisty, Most Rev. Charles, R. C. Bishop of Verdun, 81, Jan. 8.

Glass, Carter, U. S. Senator (Va.), 88, May 28.

Glennon, John Cardinal, Archbishop of St. Louis, 83, March 9.

Glintenkamp, Hendrik, painter, sculptor, wood engraver, and etcher, 58, March 19.

Goering, Hermann Wilhelm, German Nazi Marshal and leader of air forces in the Second World War, 53, Oct. 16.

Goldsborough, Phillips Lee, former Governor of Maryland and U. S. Senator, 81, Oct. 22.

Gordon, Peyton, Federal jurist (D. C.), 76, Sept. 17.

Gort, Field Marshal Viscount, British military leader, 59, March 31.

Gould, Arthur R., former U. S. Senator (Me.), 89, July 24.

Gouraud, Gen. Henri J. E., commander of the French Fourth Army in the First World War, 78, Sept. 16.

Granville-Barker, Harley, British playwright, author, and educator, 69, Aug. 31.

Gray, Dr. John H., economist, teacher, and author, 87, April 4.

Gregg, Rev. Dr. James E., congregational clergyman and former principal of Hampton Institute, 70, Feb. 23.

Gross, Brig. Gen. Mervin E., commander of the A. A. F. Institute of Technology at Wright Field, 46, Oct. 18.

Groves, Dr. Ernest R., sociologist, 62, Aug. 28.

Gruenewald, Isaac, Swedish impressionist painter, May 22.

Gudakunst, Dr. Don W., medical director of the National Foundation for Infantile Paralysis, 51, Jan. 20.

Guerin, Jules, mural painter, 79, June 13.

Gullion, Major Gen. Allen W., former Judge Advocate General and Provost Marshal General, U. S. A., 65, June 19.

Hackzell, Anders W. A., former Prime Minister of Finland, 65, Jan. 15.

Hale, Major Gen. Harry C., former Indian fighter, 84, March 21.

Hall, Fitzgerald, president of the Nashville, Chattanooga & St. Louis Railway, 56, Feb. 7.

Hamilton, Clayton, dramatic critic and playwright, 64, Sept. 17.

Hamilton, George E., Dean Emeritus, School of Law, Georgetown University, 92, May 24.

Hanbury-Williams, Major Gen. Sir John, British soldier and diplomatic aide, 87, Oct. 19.

Hand, William H., naval architect, 70, May 23.

Hansson, Per Albin, Premier of Sweden, 60, Oct. 5.

Hare, James H., war correspondent and photographer, 89, June 24.

Harned, Virginia, actress, 74, April 29.

Harris, William, Broadway producer, 62, Sept. 2.

Harrower, Rev. Pascal, canon of the Cathedral of St. John the Divine, 95, June 30.

Hart, William S., motion picture actor, 75, June 23.

Harty, Most Rev. John M., Catholic Archbishop of Cashel (Eire), 79, Sept. 11.

Harvey, George U., former president of Queens Borough, New York, 64, April 6.

Hatton, Frederic H., playwright and drama critic, 66, April 13.

Hauptmann, Gerhart, German dramatist, novelist, and poet, 83, June 8.

Hawley, Jess B., former football coach at Dartmouth College, 58, March 20.

Heath, Sir Frank, British scientist and educator, and governor of the Imperial College of Science and Technology, 82, Oct. 5.

Heise, Dr. Frederick H., tuberculosis authority, 63, June 8.

Herman, Prof. Jan, Czechoslovak

musical educator and pianist, 60, Sept. 30.

Hertz, Very Rev. Dr. Joseph H., Chief Rabbi of the United Congregations of the British Empire, 73, Jan. 14.

Hertzler, Dr. Arthur E., Kansas physician, goiter specialist, and author, 76, Sept. 12.

Hewett, Dr. Edgar L., archaeologist, 81, Dec. 31.

Hill, George W., tobacco industrialist, 61, Sept. 13.

Hill, Dr. Patty S., Columbia University educator and authority in child education, 78, May 25.

Hillman, Sidney, political and labor leader, 59, July 10.

Hilsz, Maryse, French flier, 43, Jan. 31.

Hiscock, Frank H., former Chief Judge of the New York State Court of Appeals, 90, July 2.

Hogarth, Lionel, veteran actor and stage manager, 71, April 15.

Hohler, Sir Thomas, British diplomat, 75, April 23.

Holaday, William P., former Representative in Congress (Ill.), 63, Jan. 29.

Hopkins, Harry L., former adviser to President F. D. Roosevelt, 55, Jan. 29.

Horne, Dr. Herman H., educator and author, 71, Aug. 16.

Howard, Sydney, British comedian, 60, June 12.

Howard de Walden, Eighth Baron, British landowner, poet, playwright, and patron, 66, Nov. 5.

Howe, Harland Bradley, former Federal jurist, 73, April 22.

Howland, Brig. Gen. Charles R., former commander of the 69th (N. Y.) Regiment, 75, Sept. 21.

Hubbard, Platt, painter and etcher, 56, May 7.

Humphreys, Arthur L., British bibliophile, library consultant, and author, 81, March 21.

Hurley, Charles F., former Governor of Massachusetts, 52, March 24.

Hutchison, Graham Seton, British author, soldier, and artist, 56, April 3.

Inayatullah Khan, Sirdar, former King of Afghanistan, 57, Aug. 14.

Ingersoll, Ernest, naturalist, explorer, and author, 94, Nov. 13.

Inglis, John J., Irish-American artist, 79, Sept. 2.

Jackson, Joseph, Philadelphia editor, author, and columnist, 78, March 4.

James, Alexander, portrait and landscape painter, 55, Feb. 26.

Jeans, Sir James, British scientist, 69, Sept. 17.

Jeffries, Maud (Mrs. James B. N. Osborne), former American actress, Sept. 26.

Jenkins, Col. Walter F., former national secretary of the Salvation Army, 83, Feb. 13.

Jenks, Sir Maurice, former Lord Mayor of London, 73, May 19.

Jodl, Col. Gen. Alfred, chief of the Nazi German High Command in the Second World War, 64, Oct. 16.

Johnson, Jack, former (Negro) heavyweight champion of the world, 68, June 10.

Johnson, Walter, baseball pitcher and manager, 59, Dec. 9.

Jones, George C., Vice Admiral, Chief of the Naval Staff of Canada, 50, Feb. 8.

Jones, Sidney, British composer, 77, Jan. 29.

Jong, Lieut. Gen. Van Rijswijk de, aide-de-camp to the Queen of The Netherlands, 78, July 27.

Joyce, William ("Lord Haw Haw"), British traitor in the German service, 39, Jan. 3.

Judd, Dr. Charles H., psychologist, educator, and author, 73, July 18.

Kagey, Dr. Rudolf (Kurt Steel), philosopher, educator, and writer of mystery stories, 41, May 13.

Kains, Maurice G., horticulturist and author, 77, Feb. 25.

Kalinin, Mikhail Ivanovich, former President of Russia, 70, June 3.

Keane, Richard V., Australian Minister for Trade and Customs, 65, April 26.

Kefauver, Dr. Grayson N., dean of the School of Education, Stanford University, 45, Jan. 4.

Keitel, Gen. Wilhelm, Nazi German Field Marshal in the Second World War, 64, Oct. 16.

Keith, Prof. Henry H., former head of the Department of Naval Architecture. Massachusetts Institute of Technology, 67, Dec. 2.

Kemp, Dr. William W., former dean of the School of Education, University of California, 73, May 14.

Kendall, Theodore Reed, engineer and editor, 55, Feb. 4.

Kennedy, Rear Admiral Robert M., Spanish-American and First World War veteran, 79, June 16.

Kennedy-Purvis, Sir Charles, British admiral and Deputy First Sea Lord, 61, May 26.

Keynes, John Maynard, Lord, British economist, 63, April 21.

Keyserling, Count Hermann, German philosopher, author, and lecturer, 65, April 26.

Kobrin, Leon, Yiddish author, dramatist, and journalist, 73, March 31.

Koch, Dr. Edward W., dean of the Medical School, University of Buffalo, 64, Feb. 9.

Kroll, Right Rev. Leopold, retired Episcopal Bishop of Liberia, 71, March 5.

Kutrzeba, Prof. Stanislaw, president of the Polish Academy of Science, 69, Jan. 7.

Labilliere, Right Rev. Paul de, Dean of Westminster, 67, April 28.

Landman, Rabbi Isaac, Jewish reformist, educator, and author, 65, Sept. 2.

Langdon-Brown, Sir Walter, British physician, teacher, and author, 76, Oct. 3.

Langevin, Prof. Paul, French physicist, 74, Dec. 19.

Lawrence, E. F., Dean of the College of Architecture and Allied Arts, University of Oregon, 66, Feb. 27.

Lawrence, Vincent, playwright and film-scenario writer, 56, Nov. 25.

Leary, Timothy A., New York jurist, 75, April 19.

Leathers, Dr. Walter Smith, Dean Emeritus, School of Medicine, Vanderbilt University, 71, Jan. 26.

Lee, Bert, British composer of popular songs, 65, Jan. 23.

Le Fanu, Most Rev. Henry F., Church of England Primate of Australia, 76, Sept. 9.

Leigh, Richard Henry, Admiral U. S. N., 75, Feb. 4.

Lewis, Ethelreda, British-South African author (*Trader Horn*), Aug. 1.

Lewis, Frederick G., actor, 73, March 19.

Lewis, Dr. Gilbert N., Dean of the College of Chemistry, University of California, 70, March 23.

Leyssac, Paul, Danish actor and Hans Christian Andersen interpreter, Aug. 20.

Libman, Dr. Emanuel, pathologist, bacteriologist, and diagnostician, 73, June 28.

Lieh-Chun, Gen. Li, Chinese revolutionary and military leader, 65, Feb. 20.

Locke, Bradford B., executive vice president of the Church (Episcopal) Pension Fund, 54, Jan. 5.

Locker-Lampson, Godfrey, British public official and member of Parliament, 70, May 1.

Long, Rear Admiral Andrew T., U. S. naval veteran, 80, May 21.

Lorenz, Dr. Adolf, Austrian surgeon, 91, Feb. 12.

Luce, Robert, former Representative in Congress (Mass.), 83, April 7.

Lydon, Richard P., New York State jurist, 77, March 8.

Lysen, Dr. Arnoldus, curator of the library of the Peace Palace, The Hague, The Netherlands, 51, July 11.

Machado Hernandez, Alfredo, Venezuelan Ambassador at Washington, 58, Aug. 3.

Machray, Robert, British author, 88, Jan. 24.

Macklin, E. H., Canadian newspaper publisher, 83, April 30.

MacNair, Rear Admiral James D., naval chaplain, 71, May 4.

Macready, Gen. Sir Nevil, British soldier and former Chief Police Commissioner of London, 83, Jan. 9.

Macurdy, Dr. Grace H., classical scholar, author, and teacher, Oct. 23.

Madden, Brig. Gen. John F., veteran of the Spanish-American and First World Wars, 55, May 19.

Magee, Carl, New Mexico crusading newspaper editor and exposer of the Teapot Dome Scandal, 73, Jan. 31.

Mahoney, Merchant M., Canadian diplomat, 59, May 4.

Mandelbaum, Samuel, Federal jurist (N. Y.), 62, Nov. 20.

Manning, Dr. Isaac H., former dean of the Medical School, University of North Carolina, 79, Feb. 12.

Marburg, Dr. Theodore, former U. S. Minister to Belgium, 83, March 3.

Mark, Prof. Edward L., Harvard zoologist and anatomist, 99, Dec. 16.

Marquina, Eduardo, Spanish poet and playwright, 67, Nov. 21.

Marshall, Rev. Dr. Benjamin T., former president of Connecticut College for Women, 73, June 30.

Marston, Sir Charles, British archaeologist and author, 79, May 21.

Martin, Arthur T., dean of the Law College, Ohio State University, 43, Feb. 7.

Martin, Major Gen. Charles H., former assistant chief of staff under Gen. Pershing and former Governor of Oregon, 82, Sept. 22.

Martin, Mrs. George M., Southern novelist and story-writer, Nov. 30.

Martin, Joseph, Wisconsin jurist, 67, March 19.

Marx, Dr. Wilhelm, former German Chancellor (1923-4, 1926-8), Aug. 5.

Mata, Pedro, Spanish dramatist and poet, 72, Dec. 28.

Matsui, Baron Keishiro, Japanese diplomat and statesman, 78, June 4.

Matuszewski, Ignacy, Polish diplomat, journalist, and author, 56, Aug. 3.

Maurice, Arthur B., editor and author, 73, May 31.

Maxton, James, British Socialist M. P., 61, July 23.

Maxwell, George H., head of the National Reclamation Association, 86, Dec. 1.

May of Weybridge, Lord, British insurance leader and public official, 74, April 10.

McClung, Dr. Clarence E., zoologist and authority on chromosomes, 75, Jan. 17.

McGlachlin, Major Gen. Edward F., First World War veteran and former head of the former Army War College, 78, Nov. 9.

McGovern, Francis Edward, former Governor of Wisconsin, 80, May 17.

McRae, Alexander D., Canadian senator and industrialist, 71, June 26.

McReynolds, James Clark, retired Associate Justice of the U. S. Supreme Court, 84, Aug. 24.

Mechau, Jr., Frank A., painter and art educator, 42, March 9.

Mechem, Merritt C., former Governor of New Mexico, 75, May 24.

Medalie, George Z., New York State jurist, 62, March 5.

Meek, Donald, film comedian and character actor, 66, Nov. 18.

Menville, Dr. Raoul L., dean emeritus of the College of Chemistry and Physics, Louisiana State University, 60, March 27.

Merivale, Philip, stage and screen actor, 59, March 13.

Mikhailovitch, Gen. Draja, Yugoslav leader in the Second World War, 50, July 17.

Miles, C. Austin, writer of hymns, 78, March 10.

Miura, Mme. Tamaki, Japanese opera singer, 62, May 26.

Moholy-Nagy, Laszlo, industrial designer and director of the Chicago Institute of Design, 51, Nov. 24.

Montalban, Leonardo, Nicaraguan author, educator, and editor, 59, Sept. 16.

Moran, William H., retired U. S. Secret Service official, 82, Sept. 9.

Moreland, Right Rev. William H., senior member of the House of Bishops of the Protestant Episcopal Church, 85, Oct. 27.

Morgenthau, Sr., Henry, former lawyer, industrialist, and Ambassador to Turkey, 90, Nov. 25.

Moscicki, Dr. Ignace, former President of Poland, 78, Oct. 2.

Moses, Major Gen. Andrew, former Assistant Chief of Staff to Gen. Douglas MacArthur, 72, Dec. 22.

Moskvin, Ivan M., Russian actor, 72, Feb. 16.

Moss, Dr. Sanford A., inventor and developer of turbo-supercharger for aircraft, 74, Nov. 10.

Moutier, Pierre, French author, playwright, and former Deputy, 64, Aug. 29.

Moyle, James H., former Assistant Secretary of the Treasury, 87, Feb. 19.

Nadelman, Elie, sculptor and founder of the Museum of Folk Arts, 64, Dec. 28.

Napier, Major Gen. Charles S., British soldier, 47, June 16.

Nash, Paul, British artist and wood engraver, 57, July 11.

Neilson, Dr. William Allen, president emeritus of Smith College, 76, Feb. 13.

Nelson, Rear Admiral John T., senior officer of the U. S. Naval Reserve, 69, May 30.

Nelson, William L., former Representative in Congress (Mo.), 71, Dec. 31.

Nevinson, Christopher R. W., British realist artist, 57, Oct. 7.

Nicholson, John H., one of the founders of the Gideons, 86, Oct. 26.

Nicolson, Dr. Frank W., dean emeritus of Wesleyan University, 82, Dec. 21.

Noble, Henry G. S., former president of the New York Stock Exchange, 86, Feb. 6.

Nobre, Dr. Augusto, Portuguese statesman and zoologist, 81, Sept. 14.

Northcott, Elliott, Federal jurist (W. Va.), 76, Jan. 3.

Nowak, Prof. Julian, former Premier of Poland and former rector of the University of Cracow, 81, Nov. 10.

Nowowiejski, Feliks, Polish composer and composer of Poland's national hymn, 63, Jan. 24.

Noyes, Theodore W., editor in chief of *The Washington* (D. C.) *Star*, 88, July 4.

Nuelsen, Rev. John L., former M. E. bishop in Europe, 79, June 26.

Oldfield, Berna Eli (Barney), pioneer automobile racer, 68, Oct. 4.

Oman, Sir Charles, British historian, 86, June 23.

Oppenheim, E. Phillips, British novelist of international intrigue, 79, Feb. 3.

Osborn, Dr. Max, German author and art critic, 76, Sept. 24.

Paredes, Francisco Arias, Panama statesman, 58, July 30.

Parker, Homer C., Controller General of Georgia and former Representative in Congress, 60, June 22.

Parker, Major Gen. James E., commander of the Twentieth Air Force (U. S.), 49, March 19.

Parrado, Augustin Cardinal, Archbishop of Granada, 74, Oct. 8.

Passmore, Walter, British musical comedy and Gilbert and Sullivan star, 79, Aug. 29.

Paterno, Dr. Charles V., New York realty leader and philanthropist, 69, May 30.

Pattee, Dr. Ernest N., founder and former dean of the Department of Chemistry, Syracuse University, 81, Jan. 17.

Patterson, Joseph Medill, newspaper publisher, 67, May 26.

Pattison, Frank A., electrical and mechanical engineer, 80, Sept. 18.

Payen, Fernand, president of the Paris bar and defense counsel for Marshal Petain, 73, Jan. 8.

Peake, Dr. Harold J. E., British anthropologist, 78, Sept. 22.

Peirce, Hayford, archaeologist and authority on Byzantine art, 62, March 4.

Pelley, John J., president of the Association of American Railroads, 68, Nov. 12.

Pesquidoux, Joseph de, French novelist, 76, March 18.

Pettitt, Thomas, former holder of the world tennis title, 86, Oct. 17.

Perry, Antoinette (Mrs. Frank W. Frueauff), stage director, 58, June 28.

Phelan, Major Gen. John J., former chairman of the New York State Athletic Commission, 73, Jan. 22.

Pinchot, Gifford, former Governor of Pennsylvania, 81, Oct. 4.

Pippin, Horace, Negro artist, 57, July 6.

Placzek, Dr. Siegfried, German-born neurologist, 79, March 8.

Plender of Sundridge, Lord, British accountant, 84, Jan. 19.

Plummer, Prof. H. E., British astronomer and mathematician, 70, Sept. 30.

Poindexter, Miles, former U. S. Senator (Wash.), 78, Sept. 21.

Pollack, Lew, writer of popular songs, 50, Jan. 18.

Pollock, Channing, playwright and essayist, 66, Aug. 17.

Porter, Claude R., member of the

Interstate Commerce Commission, 74, Aug. 17.

Porter, Dr. Frank C., theologian and Semitic authority, 87, Jan. 24.

Posnansky, Arturo, German-born Bolivian archaeologist and educator, 72, July 28.

Potemkin, Vladimir P., Russian diplomat, 68, Feb. 23.

Poulbot, Francisque, French painter of children, 67, Sept. 16.

Powell, Dr. Lyman P., Episcopal clergyman, author, and former president of Hobart College, 79, Feb. 10.

Pruitt, Dr. Cicero W., former Baptist missionary and educator in China, 89, Nov. 27.

Putten, Charles V., Belgian underground leader in the Second World War, Dec. 9.

Pyeatt, John S., former chairman of the Missouri Pacific Railroad Co., 72, Oct. 20.

Raimu (Muraire) **Jules**, French stage comedian and film star, 63, Sept. 20.

Randall, Dr. John H., clergyman, philosopher, author, 75, May 15.

Rankin, Sir George, British authority on Indian jurisprudence, 68, April 8.

Rathbone, Eleanor, British social worker and M. P., 73, Jan. 2.

Rhys, Ernest, British author, poet, and editor of Everyman's Library, 86, May 25.

Ribbentrop, Joachim von, former Foreign Minister of Nazi Germany, 53, Oct. 16.

Richardson, Henry Handel (Mrs. J. G. Robertson), Australian-born British novelist, March 20.

Richepin, Jacques, French author, playwright, and producer, 66, Sept. 2.

Richmond, Sir Herbert, British admiral and naval historian, 75, Dec. 15.

Riedel, Dr. Karl, Austrian-born Metropolitan Opera conductor, 66, Feb. 2.

Riley, Ben, British Labor leader and former M. P., 80, Jan. 6.

Rios, Juan Antonio, President of Chile, 58, June 27.

Rippey, Harlan W., New York State jurist, 71, March 11.

Robbins, Henry P., civic leader and philanthropist, 71, March 20.

Roberts, Albert H., former Governor of Tennessee, 77, June 25.

Robinson, Dr. Maurice H., economist, educator, author, 80, Feb. 28.

Rock, Rear Admiral George H., naval construction architect and former head of the Webb Institute of Naval Architecture, 77, April 21.

Rolin, Henri E. A. M., former president of the Belgian Court of Cassation and teacher of constitutional law, 72, June 13.

Rose, Prof. Arnold, violinist and leader of the Vienna Philharmonic Orchestra, 83, Aug. 25.

Rosenau, Dr. Milton J., director of the School of Public Health, University of North Carolina, 77, April 9.

Rosenfeld, Paul, music and art critic, 56, July 21.

Rosenthal, Moriz, Polish pianist, 83, Sept. 4.

Ross, C. Ben, former Governor of Idaho, 69, March 31.

Ross, Rev. J. Elliott, Catholic author and lecturer, 62, Sept. 18.

Rothschild, Baron Robert de, French banker and philanthropist, 66, Dec. 25.

Rowe, Dr. Leo S., Director General of the Pan American Union, 75, Dec. 5.

Runyon, Damon, newspaper columnist and Broadway fiction chronicler, 62, Dec. 10.

Russell of Killowen, Lord, British jurist, 79, Dec. 20.

Sacasa, Dr. Juan B., former President of Nicaragua, 71, April 17.

Sands, William F., diplomat and authority on Korea, 72, June 17.

Satterfield, Dave E., insurance leader and former Representative in Congress (Va.), 52, Dec. 27.

Savage, Courtenay, playwright, 56, Aug. 23.

Saxon, Lyle, novelist and historian of the South, 54, April 9.

Schmedeman, Albert G., former Governor of Wisconsin and U. S. Minister to Norway, Nov. 26.

Scholten, Prof. Paul, Dutch jurist, legislator, and educator, 70, May 2.

Scott, Charles W. A., British airman, 43, April 15.

Sears, Joseph H., former book publisher and author, 81, Feb. 15.

Sergine, Vera, French actress, 62, Aug. 22.

Servais, Jean, Belgian statesman and jurist, 90, Dec. 9.

Seton, Ernest Thompson, author and naturalist, 86, Oct. 23.

Shannon, Major Gen. Edward C., former Lieutenant Governor of Pennsylvania, 75, May 20.

Shaw, Arthur, actor, 65, March 22.

Sheldon, Rev. Dr. Charles M., author of *In His Steps,* 89, Feb. 24.

Sheldon, Edward B., playwright, 60, April 1.

Shreve, Richmond H., architect and housing authority, 69, Sept. 10.

Simpson, Ernest C., Connecticut jurist, 74, May 21.

Sinclair, Joseph H., geologist and explorer, 66, May 24.

Sinclair, May, novelist and philosophical critic, 76, Nov. 14.

Slezak, Leo, Austrian tenor, 71, June 6.

Smith, Brig. Gen. Abiel L., Indian war correspondent and captor of Geronimo, 88, April 24.

Smith, Dr. Frederick M., president of the Reorganized Church of Jesus Christ of Latter Day Saints (Mormon), 72, March 20.

Smith, Logan Pearsall, American-born British essayist, 80, March 2.

Smith, Dr. R. Kendrick, president of the Massachusetts College of Osteopathy, 73, Aug. 29.

Smith, Dr. Ulysses S., former president of Iowa Wesleyan College, 76, June 21.

Snyder, Carl, author, economist, statistician, 76, Feb. 15.

Snyder, John Buell, Representative in Congress (Pa.), 68, Feb. 24.

Southwood, Viscount (Julius Salter Elias), British publisher, 73, April 10.

Spreckels, Claus A., sugar refining industrialist, 88, Nov. 9.

Statham, Sir Charles, former Speaker of the New Zealand House of Representatives, 70, March 5.

Stearns, Charles F., former Chief Justice of the Rhode Island Supreme Court, 80, Sept. 3.

Stein, Gertrude, eccentric author and playwright, 72, July 27.

Stella, Joseph, Italian-born American artist, 70, Nov. 5.

Stephens, Hubert D., former U. S. Senator (Miss.), 70, March 14.

Sterner, Albert, British-born American artist, 83, Dec. 16.

Stewart, Charles, Canadian statesman and legislator, 78, Dec. 6.

Stieglitz, Alfred, art photographer, 82, July 13.

Stilwell, Gen. Joseph W., heroic leader of the Burma campaign in the Second World War, 63, Oct. 12.

Stirbey, Prince Barbu, former Premier of Rumania, 73, March 24.

Stone, Harlan Fiske, Chief Justice of the United States, 73, April 22.

Strawn, Silas H., Chicago lawyer and civic leader, 79, Feb. 4.

Strelsky, Dr. Nikander, Russian-born Slavic scholar and author, 53, June 20.

Strong, Major Gen. George V., former Assistant Chief of Staff, U. S. A., 65, Jan. 10.

Strunk, Dr. William, professor emeritus of English at Cornell University and editor, 77, Sept. 26.

Summerville, "Slim," motion picture actor, 50, Jan. 5.

Swettenham, Sir Frank, former British Governor and Commander in Chief of the Straits Settlements, 96, June 11.

Swift, Linton B., general director of the Family Welfare Association of America, 57, April 11.

Tait, Vice Admiral Sir Campbell, British sailor and Governor of Southern Rhodesia, 60, July 17.

Talmadge, Eugene, former Governor and Governor-elect of Georgia, 62, Dec. 21.

Tanner, Charles E., Canadian senator (N. S.), 88, Jan. 13.

Tanner, Willard B., Rhode Island jurist, 87, May 21.

Tarbell, Arthur W., Dean Emeritus of the Carnegie Institute of Technology, 74, Nov. 25.

Tarkington, Booth, novelist, 76, May 19.

Taylor, Dr. Charles V., Dean, School of Biological Sciences, Stanford University, 61, Feb. 22.

Taylor, Laurette, actress, 62, Dec. 7.

Tener, John K., former Governor of Pennsylvania, 82, May 19.

Terauchi, Count Juichi, Japanese field marshal, June 12.

Terral, Tom J., former Governor of Arkansas, 62, March 9.

Thompson, Dr. Edward J., British authority on India, poet, and author, 60, April 28.

Thompson, Joseph W., former Federal jurist (Pa.), 84, Jan. 7.

Thorne, Will, British labor leader and M. P., 88, Jan. 2.

Tixier, Adrien, French Socialist, diplomat, and statesman, 48, Feb. 18.

Toch, Dr. Maximilian, chemist and art expert, 81, May 28.

Tomb, Capt. Maurice H., first superintendent of the U. S. Merchant Marine Academy, 70, Sept. 25.

Traub, Dr. Michael, Zionist leader, 55, April 24.

Trimble, South, Clerk of the House of Representatives and former Congressman (Ky.), 82, Nov. 23.

Tritton, Sir William A., British tank designer and developer, 71, Sept. 24.

Tuttle, Emerson, artist and master of Davenport College, Yale University, 55, March 8.

Tyler, George C., theatrical producer, 78, March 13.

Ubico, Gen. Jorge, former President of Guatemala, 67, June 14.

Underhill, Charles L., former Representative in Congress (Mass.), 78, Jan. 28.

Utley, George B., librarian, 69, Oct. 4.

Valentine, Lewis J., former Police Commissioner of New York, 64, Dec. 16.

Van Maanen, Dr. Adriaan, Dutch-born astronomer of Mt. Wilson Observatory, 61, Jan. 26.

Van Schendel, Arthur, Java-born Dutch novelist, 72, Sept. 14.

Vassiliev, Georgy N., Russian film producer, June 20.

Vickery, Howard L., Vice Admiral, U. S. N., former vice chairman, United States Maritime Commission, 53, March 21.

Victor Emmanuel, Prince, Count of Turin, cousin of ex-King Victor Emmanuel III of Italy, 76, Oct. 16.

Villarroel, Gualberto, President of Bolivia, July 21.

Von Tilzer, Harry, popular song composer, 73, Jan. 10.

Waesche, Admiral Russell R., head of the U. S. Coast Guard in the Second World War, 60, Oct. 17.

Walch, Dr. Johannes L., Dutch playwright, director of the Amsterdam School of Dramatic Arts, 67, Dec. 12.

Waldron, Charles, stage and screen star, 71, March 4.

Walker, James J., former Mayor of New York, 65, Nov. 18.

Warburg, Max M., German banker and philanthropist, 79, Dec. 26.

Watson, Maud, first British tennis champion, 81, June 5.

Watt, William A., former Acting Prime Minister of Australia, 75, Sept. 13.

Webber, Amherst, British composer and pianist, 78, July 26.

Weber, Abraham S., former New York State Budget Director, 56, April 29.

Welling, Richard W. G., lawyer, civic reformer, and author, 88, Dec. 17.

Wells, Gabriel, dealer in rare books and manuscripts, 85, Nov. 6.

Wells, Herbert George, British novelist, historian, and sociologist, 79, Aug. 13.

Wendt, William, German-born American artist, 81, Dec. 29.

West, John C., former president of the New York Bible Society, 85, Feb. 13.

Weston, Thomas A., horticulturist and author, 68, May 6.

Wetherill, Dr. Henry E., surgeon and inventor, 75, March 8.

Wheeler, Brig. Gen. Charles B., ordnance chief of the United States Army in the First World War, 80, April 11.

Wheelock, Lucy, kindergarten leader and founder of Wheelock College (Boston), 87, Oct. 2.

Whitaker, Col. John T., journalist and author, 40, Sept. 11.

WHITE, MRS. HENRY, daughter of William H. Vanderbilt and widow of former U. S. Ambassador to France and Italy, 94, July 28.

WHITE, STEWART EDWARD, novelist, 73, Sept. 18.

WHITMAN, RALPH, Rear Admiral, U. S. N., 66, Feb. 3.

WICKLOW, SEVENTH EARL OF, former Eire senator, 68, Oct. 11.

WILDER, DR. GEORGE D., former Congregationalist missionary in China, 76, May 5.

WILKINSON, THEODORE S., Vice Admiral, U. S. N., 57, Feb. 21.

WILLIAMS, DR. CLARK, former New York State Superintendent of Banks and State Controller, 76, Dec. 18.

WILLIAMS, VALENTINE, English journalist and author of spy and detective novels, 63, Nov. 21.

WILLS, WILLIAM H., former Governor of Vermont, 63, March 6.

WILSON, F. M. HUNTINGTON, diplomat and author, 71, Dec. 31.

WILSON, HUGH R., former Ambassador to Germany, 61, Dec. 28.

WINNINGTON-INGRAM, DR. ARTHUR F., former Anglican Bishop of London, 88, May 26.

WOODWARD, ROLAND B., Vice Chancellor of the University of the State of New York, 73, Dec. 27.

WRIGHT, DR. WALTER L., president emeritus of Lincoln University (Negro), 73, Jan. 17.

YANES, DR. FRANCISCO G., Venezuelan jurist and diplomat, 61, Aug. 3.

YOLDI, GEN. LUIS M. ORGAZ, Chief of Staff of the Spanish Army, Jan. 31.

YOUMANS, VINCENT, composer of popular songs, 47, April 5.

ZAGHLOUL, MME. SAFIA, widow of Egypt's nationalist leader, and "mother of the Egyptians," Jan. 12.

ZEITLIN, ALEXANDRE, Russian-born sculptor, 73, March 4.

ZEPEDA, DR. MAXIMO H., Nicaraguan statesman, diplomat, and jurist, 70, June 11.

INDEX

ABDULLAH, Emir, 130, 131
Abnormal Psychology, 857, 858
Absent Voting, 201
Abyssinian Church, 683
Accident Insurance, 452, 453
Accounting, Governmental, 432, 433
  Procedure, Emergency Facilities, 435
Acheson, Dean, 100
Acheson-Lilienthal Report, 668
Acridines, 789
Actinomyces, 822
Activated Silica in Water Treatment, 330
Adam, Archbishop, 682
Adams, Carlyle, 674
Adler, Mortimer J., 1054
Administration of the Tariff Laws, 535–540
Administration of Veterans Affairs, 356–363
Administrative Agencies, Federal, 55–62
Administrative Procedure Act, 30
Adult Education, 1032–1041
  Conferences on, 1032, 1033
  Councils on, 1033
  Jewish Field, 1034, 1035
  Joint National Conference on, 1032, 1033
  Libraries in, 1054, 1055
  Materials and Methods, 1040
  Motion Pictures for, 1040
  Negro, 1047, 1048
  Post-War Needs, 1036
  Professional Groups, 1036, 1037
  University Courses for, 1037–1039
  Women's Groups, 1040
Adult Jewish Studies, National Academy, 1034
Aerial Navigation, 701
Aerial Photography, 291, 293, 296
Aeronautical Chart Service, 287, 288, 295
Aeronautics, Bureau of, 349
Aeronautics, National Advisory Committee for, 1, 709
Aery, William Anthony, 1041
Aesthetics, 863
Affection, 862, 863
Afghanistan, 80
AFL (*see* American Federation of Labor)
Africa, Bernabe, 115, 119
Africa, Books on, 893, 894
  Expeditions to, 770
  History of, 885
Africa-Middle East Theater, Casualties, 347
African Colonies, Disposal of, 95
African Methodist Episcopal Zion Church, 673
Agar-Agar, 811
Aged, Institutional Care for the, 605
Agricultural Adjustment Act, 532, 535
Agricultural Adjustment Administration, 58
Agricultural Development Co., 235, 727
Agricultural Economics, Bureau of, 297
Agricultural Employment, 645
Agricultural Extension Service, 1034
Agricultural Research, Grants for, 187
Agriculture, 383
  in Alaska, 225
  and Allied Industries, 458–499
  Child Labor in, 650
Agriculture, Conditions in, 458–468
Agriculture, Puerto Rico, 235
Agriculture, Department of, 57, 58, 159, 645
  Appropriation Bill, 33, 548, 549
  Food Programs, 460, 467
Agriculture and Forestry, Senate Committee on, 533
Agriculture, House and Senate Committee on, 533
Agriculture, Secretary of, Functions of, 57
Air Accident Insurance Policies, 452
Air Bases in Middle East, 131
  Express, 566
  Facilities, 62
Air-Conditioning, 725, 726
  for Buses, 551
Aircraft Carrier, 364, 366
  Cargo, 566, 567
  Expense and Revenue, 566–570
Aircraft, Guided Missiles, 572
  Heat Problems, 718
  Manufacture, 571, 721
  Research, 571, 572
  Rocket Propelled, 564
Airline Communication Employees Association, 632
Airlines Expansion, 563
  Passenger Revenue, 564–566
  Safety Measures, 564
  Taxation of, 189
Air Mail, 564–566
  Rate, 40
Air Navigation Facilities, 59, 60
Air Photographs, 290
Airplanes (*see also* Aviation)
  Equipment and Schedules, 564
  Ground Controlled Approach, 572
  Personally owned, 564
Airport Authority, 211
Airports, 571
  Grants-in-aid for, 185, 186
  Program for, 25
  State Construction of, 181, 187, 198
  Surveyed, 290
Air Transport Association, 565
Air Transport Problems, 211
Air Transportation Mileage, 564, 565
Airways, 571
Air Weather Service, 356
ALA (*see* American Library Association)
Alabama, Geology, 299
  Veterans Preference Policy, 169
Alaska, 225–228
  Agriculture, 225
  Development, 318, 319
  District Land Offices, 319
  Education in, 225
  Finance, 226
  Fire Control Service, 319
  Fisheries in, 226
  Forests in, 226
  Furs in, 227, 493, 494
  Health, 227
  Herring, 492, 493
  Highway, 318, 548
  Minerals, 227
  Observatory, 759, 760
  Post-War Army Facilities, 345
  Post-War Opportunities, 316, 317
  Railroad, 228
  Reindeer in, 227
  Statehood for, 2
  University of, 225
Alaska Rural Rehabilitation Corporation, 225
Alaskan Department, 347

INDEX

Albania, 77, 80, 95, 101
Albany Institute of History and Art, 957
Alcan Highway, 32, 346
Alcoa (*see* Aluminum Company of America)
  Passenger-Cargo Ships, 747, 748
Alcoholic Beverages, Production of, 525
  Taxes, 256, 260
Aldrich, Winthrop, 30
Alexei, Archbishop, 682, 683
Alfalfa, 805, 806, 816
Algebra, 698
Ali, Hussein, 75
Alien Land Act, 589
Alien Property Administration, Philippine, 61, 62
Allatoona Dam, 728
Allen, George E., 26
Allen, H. K., 264
Allen, Robert E., 512
Allergy, Manifestation of, 826
Alley Dwelling Act, 245, 246
Allied Control Commission, 617
Allied Control Council, 715
Allied Mission for Greek Elections, 100, 101
Allied Nations Peace Conference, 11
Allied Policy in Japan, 108, 109
Allied Powers, Fleets of, 561
Allied Troops, 79, 80, 97
Allis-Chalmers Machine, 717
Alloy Irons, 722
Alloy Steel Production, 505
Alter, Karl J., 678
Aluminum, 507, 508, 730
  Alloys, 710, 713, 746, 747, 795
  in Housing Program, 508
  Scrap, 354
Aluminum Company of America, 507, 508
Alvarez, Luis W., 564, 572
Alzona, Encarnacion, 119
Amadon, Dean, 768
Amalgamated Lithographers, 632
Amazonian Peru, 769
AM Broadcasting, 737
America, Churches in, 659, 660
America, Reconverted Ship, 556, 557
American Action Inc. of Chicago, 32
American Art Group, Shows of, 959, 960
American Artists Professional League, 953
American Association for Adult Education, 1036, 1037, 1040
American Association for the Advancement of Science, 754
American Association for Jewish Education, 689
American Association of Medical Social Workers, 1031
American Association of Psychiatric Social Workers, 1031
American Association of Schools of Social Work, 1031
American Association of State Highway Officials, 333, 335
American Association of Teachers Colleges, 1029
American Association of Teachers of Slavic and East European Languages, 937
American Association of Theological Schools, 1030
American Association of University Women, Adult Study Program, 1040
American Astronomical Society, 700, 701
American Automobile Association, 221, 333, 334, 338, 339
American Bankers Association, 403, 405, 406
American Baptist Foreign Mission Society, 665, 666
  Home Mission Society, 665
American Bar Association, 30, 1024
American Bible Society, 661
American Book Center, 1053
American Bureau of Metal Statistics, 500, 501
American Chemical Society, 786, 787
American Civil Aviation in Middle East, 131
American Colonies, 881
American Commission for the Protection and Salvage of Artistic and Historic Monuments in Europe, 953
American Communications Association, 632
American Congress on Surveying and Mapping, 297
American Council on Education, 1003, 1007, 1010
American Council of Judaism, 684
American Council of Learned Societies, 938, 944
American Council on Race Relations, 594, 596, 597
American Dental Association, 845
American Drama, 910
American Education, Improvements for, 1004, 1005
American-Egyptian Cotton Crop, 470
American Eighth Army, 109
American Ethnological Society, 869
Amundsen Expedition, 760
American Exploration, 767–770
American Farm Bureau, 36
American Federal System, National-State Cooperation, 187
American Federation of Labor, 86, 208, 210, 624, 630–633, 639, 640, 842, 985, 993
  CIO Dispute with, 639
  Strike of Utility Workers, 325
American Flag Vessels, 558–561
American Folklore Society, 871
American Forestry Association, 496–498
American Friends Service Committee, 670
American Gas Association, 323
American Geographical Antarctic Expedition, 767
American Geographical Society, 760, 767
American Geophysical Union, 297
American Guild of Musical Artists, 968
American Hierarchy, 676, 678
American Indian Affairs, 597–599
  Administration Reforms, 597, 598
  Budget, 598
American Indian Myth, 871
  Work on, 869
American Industry, 521, 531
American Influence, Territories and Spheres of, 225
American Institute of Accountants, 431–439
American Institute of Electrical Engineers, 719
American Iron and Steel Institute, 388
American Jewish Committee, 684, 685, 688
American Jewish Community 684, 688
American Labor Education Service, 1039
American Legion, 38, 688
American Legislators Association, 192
American Library Association, 1034, 1051
  Awards, 1057
  and Federal Agencies, 1051, 1052
  International Relations Office, 1053
  National Relations Office, 1051
  Organization, 1057
  Publications, 1057, 1058
American Literature, 908
American Loan to Philippines, 118
American Lutheran Church, 671
American Mathematical Society, 695, 699
American Medical Association, 830, 841
American Merchant Marine, 744
American Missionary Association, 661
American Military Alliance, 16
American Military Government, 658, 689, 952
American National Research Committee, 758
American Oriental Society, 944
American Penwomen, League of, 873
American Petroleum Institute, Reserve Committee, 514
American Philosophical Society, 869
American Philosophy, Contemporary, 867, 868
American Policy in Japan, 108

American Political History, 1–73
American Psychological Association, 856
American Public Health Association, 838
American Public Works Association, 258
American Railroads, Association of, 386, 387, 545, 546
American Red Cross, 413, 841
American Repertory Theatre, 978
American Republics, Exports to, 417
American Republics, Oceanographic Cooperation, 772
  Vital Statistics Program, 853
American Research, School of, 950
American Retail Federation, 338
American Rocket Society, 715
American Samoa, 242–244
  Education, 243
  Government, 243
  Volcanic Formation, 243
American-Scandinavian Foundation, 914
American School of Classical Studies at Athens, 949
American School of Oriental Research at Jerusalem, 950
American School of Prehistoric Research, 950
American Shipyards Production, 556, 558, 744
American Smelting and Refining Co., 509
American Society of Civil Engineers, 297
American Society for Engineering Education, 714, 1023
American Society of Heating and Ventilating Engineers, 725
American Society for Mechanical Engineers, 715–717, 719, 720
American Society of Photogrammetry, 297, 298
American-Soviet Relations, 658, 659
American Standards Association, 726
American Steamship Companies, 563
American Tankers, 560
American Telephone and Telegraph Co., 324, 738
American Trucking Association, 550
American Water Works Association, 328, 332
American Zionist Emergency Council, 127, 128, 685
Americas, Books on the, 884
  Peace and Security of, 123
AMG (*see* American Military Government)
Amines, 793
Amman, 130
Ammonia, 778, 785
Ammonium Dihydrogen Phosphate, 755
Amplitude Modulation, 737, 738
Anacosta Naval Air Station, 736
Anacostia River Bridge, 713
Anatomy, Plant, 811, 812
Ancient History, 889
Andean Research, Institute of, 869, 870, 951
Anderson, Maxwell, 980
Anderson Ranch Dam, 313, 314, 711
Andrei, Bishop, 683
Anemia from Burns, 833
Anesthesia, Surgical, 845, 846
Angioneurotic Edema, 826
Anglo-American Committee of Inquiry, 61, 127, 684, 685
Anglo-American Oil Treaty, 190
Anglo-Egyptian Sudan Union, 128, 129
Anglo-Egyptian Treaty, 129
Anglo-Soviet-Iranian Treaty of Alliance, 1942, 74, 75
Angostura Dam, 312, 313
Animal Evolution, 800
  Pests, 805
  Psychology, 861
  Self-fertilization, 800
Annand, P. N., 485
Antarctic Expeditions, 767
Antarctica, 760, 767
Anthologies, 877
Anthony, Harold E., 770
Anthracite Mine Workers Agreement, 625
Anthropological Societies, Meetings of, 871
Anthropology and Ethnology, 868–871
  Physical, 869
Anti-Anemia Factors, 791, 792
Antibiotics, 790, 822, 829
Anti-Jewish Organizations, 690, 691
Anti-Jewish Tract, 587
Antimalarials, 788, 789, 824, 825
Anti-Negro Organizations, 690
Anti-Poll Tax Bill, 40
Anti-Pollution Bill, 221
Antiquities, Studies of, 949, 951
Anti-Racketeering Act, 634
Anti-Semites in Political Office, 690, 691
Anti-Semitism, 587, 588
Anti-Soviet Bloc, 12
Applied Mechanics, 715, 716
Apprentice Training Service, 247, 638, 639
Appropriation Acts, 26, 27
Appropriations Committee, House, 602
Aqueducts under Construction, 314, 315
Arab Countries, U. S. Diplomatic Relations, 131
Arab and Jew Hostility, 128, 684
Arab League Politics, 128, 129
Arab Nationalism, 127
Arab State, Economic Development, 129
  in Palestine, 5, 685
Arab Threats, 127
Arabian Agitators, 690
Arabian American Petroleum Co., 516
Arc Welding, 721
Archaeological Expeditions, 869, 870
  Finds, 951
  Studies, 949
Archaeological Institute of America, Activities, 949, 950
Archaeology, 869, 870, 949–952
  Field Reports, 951
  Greek, 930, 931
  Publications on, 951, 952
Archaeology, Semitic, 932
Architecture, 882
Arctic Expeditions, 767, 768
Arctic Institute of North America, 869
Argentina Blue Book, 125, 126
  Nazi Conspiracy in, 125, 126
  Officials, Fascist, 125, 126
  United States Relations with, 125, 126
Argonne National Laboratory, 346
Arizona, Geology, 299
  Retirement Systems, 169
Arkansas, Geology, 299
Arkansas-Memphis Bridge, 713
Arkansas Power and Light Co., 727
Armament, Defense and, 342–381
Armed Forces, Affairs of, 27, 28
  Demobilization, 582
  Negroes in, 592, 593
  Leave Act, 352, 360
  Voluntary Recruiting Act, 353
Armenian Church, 683
Armenians, 945
Armour & Co., Wage Increases, 631
Army Air Force, 287, 290, 343–345, 355
  Communications System, 344
  Fire Fighting and Rescue Equipment, 344
  School for Musicians, 348
  Weather Tests, 356
Army, United States, 342–356
  Chaplains School, 348
  Corps, Women's (*see* Womens Army Corps)
  Correctional Programs, 614, 615
  Dog Association, 347
  Engineer Corps, 345, 709–712, 716
Army Food Service Schools, 349
  Ground Forces Schools, 349
  Housing, 350
  Industrial College (*see* Industrial College of the Armed Forces)
  Information School, 348
Army Map Service, 288, 290, 295
Army Medical Corps, 345, 346
  Officers, 351
  Organization, 342, 343
  Pay, 352
  Post-War Recruiting, 353
  Program for Illiterates, 1048
  Radar Experiment, 737
  Readjustment after War, 342
  Reorganization, 353, 354
  Research and Training, 348
  Scientific Research, 709
  Signal Corps, 352, 433
  Thoracic Centers, 835

  Training Programs, 355, 938
  Uniforms, 355
  (*see also* United States Army)
Army-Navy Amphibious Operations, 350
  Merger, 6, 7, 28
Army and Navy Staff College (*see* National War College)
Arnall, Ellis, 594, 595, 1041
Art Alliance of Philadelphia, 962
Art, Auction Sales of, 960, 961
  Exhibits in Germany, 952
  Exports of the United States, 953
  Greek, 930, 931
Art, Industry's Patronage of, 954, 955
  Tours, U. S. State Department, 953
  Treasures, Displaced, 952
Art Institute of Chicago, 953, 956
Arteries, the, 834
Artist-Veterans, 964
Artists, Biographies of, 888
Arts, The, 949–992
Asch, Sholem, 874
Asia, Food Relief for, 3
  History of, 885
  Hoover Visits, 21
Asiatic Cultures, 868, 869, 943
Asiatic Theaters of War, 342
Astronomers, 700, 701
Astronomy, 700–706
  Observatories, 700, 701
  War Work in, 701
Atabrine, 788
Atcheson, George, 109
Athenagoras, Bishop, 681, 682
Athens, Ala., Race Riot in, 593, 594
Athens, Greece, Classical Studies at, 949
Athens, Tenn., Political Revolt in, 216, 217
Atlanta, Columbians in, 595
Atlantic Charter, 139
Atlantic States Marine Fisheries Commission, 194
Atlases (*see* Mapping and Maps)
Atomic Age, 708
Atomic Bomb, 346
  Canadian Compromise, 14
  Radio-active Effects of, 784, 785
  Release of, 654
  Research, 776, 781
  Tests, 774
  Threat of, 13
Atomic Energy, 28, 29, 322, 323, 512, 513
  Action on, 4
  Civilian Control Commission for, 28, 29
  Control, 4, 6, 11, 14, 665, 675
  Fund for, 28
  International Control, 654
  Peacetime Use, 716
  Plant Construction, 716
  Physiological Effects of, 827, 828
  in Propulsion, 365, 366
  Vandenberg Amendment, 15
  Violations, 14
Atomic Energy Act, 716
Atomic Energy Commission, 4, 11, 14, 15, 80–82, 160, 346, 715, 716
  Resolutions, 81
Atomic Information, National Committee, 679
Atomic Power, 716, 822
  Plant Costs, 322
  Research for, 323, 346
  for Warships, 373
Atomic Weapons, 97
Attainder, Bill of, 44–46
Attlee, Clement R., 128
  Palestine Policy, 5
Auditing, 431–433
Audubon Artists Group, 960
Augusta Citizens Union, 215
Aurand, Henry S., 343
Austin, Warren R., 10, 26, 656, 673
Australia, 85, 86, 90
  Imports Revenues, 536–539
  Trust Territories, 85
  Veto Proposition, 82
Austria, 94
  Germany's Threat of War to, 104
  Peace Treaties with, 12, 97, 98
Authors, Biographies of, 887
Automobile Industry, 529, 539
  Liability Insurance, 448, 450, 451
  Strike in, 624
  Taxes, 282–284
Automotive Industry, 387, 388
  Labor Difficulties, 387, 389
Automotive Safety Foundation, 337, 338, 339
Aviation, 181, 369
  (*see also* Airplanes)
  Alaska, 228
  Commercial, 563–572
  Legislation, 191
  Liability Insurance, 453, 454
Axis Powers, Fleets of, 561
  Satellite States, Peace Settlements, 89, 94, 95, 97
  War Criminals, Trial of, 40
Aydelotte, Frank, 139
Azerbaijan Democratic Party, 76
  Oil Concessions, 129, 130
  Red Army Troops in, 76
  Revolt in, 129, 130

BACH Festival, 971
Bachelor, Robert W., 400
Bacher, Robert F., 4
Bacon Tunnel, 315
Baku, 76
BAL (*see* British Anti-Lewisite)
Baldwin, Joseph Clark, 214
Balkan Crisis, 77, 78
  Orthodox Church of, 683
Baltimore, Charter, 217
  Museum of Art, 962
  Symphony, 975
Banks, Assets and Liabilities, 403, 404
  Burglary and Robbery Policies, 451
  Clearings, 385, 386
  Earnings, 403
  Holdings, Commercial, 401
  Loans, 401
Bank Taxes, Corporation and 278–280
  State, 279, 280
Banking Affairs, 400–405
  Foreign, 402
  Legislation, 403
  Offices, 402
Banking and Currency, House Committee on, 842
Baptists against Conscription, 665
Barkley, Alben W., 25, 35, 36
Barley, Production of, 477
Baruch, Bernard M., 13–15, 81
  Atomic Energy Proposals, 14, 668
  on OPA, 36
  Wallace Controversy, 14
Basle, 128
Bataan, 117
Bates, Sanford, 617
Beans, Dry, 478
Beard, M. R., 880
Becker, May Lamberton, 873, 895
Bee Culture, 490
Beebe, William, 769
Beers, G. L., 734
Belgium, 85, 86, 90
  Seizure, 105
  Trust Territories, 85
Belgrade, American Information Center, 100, 1053
  Pro-Soviet Regime in, 91
Bell, C. Jasper, 117
Bell, Daniel W., 37
Bell Telephone System, 324
Bell Trade Act, 119–121
Belles Lettres, 895–897
Bellows, George, 959
Benadryl, 826
Benign Tumors, 835
Benjamin-Alexei, Metropolitan, 682
Bennett College, 1045
Bennett, James V., 614
Bennett, L. Howard, 587
Benson, Mark, 719
Benson, Mary Sumner, 24
Benzylpenicillin, 789
Bergman, Ingrid, 980
Berkshire Music Festival, 970, 971
Bermuda, Books on, 892
Bernstein, Philip S., 688
Berry, Rose V. S., 961
Berryman, Florence S., 952
Bessarabia, 96
Betatron, 733, 734, 761
Bevin, Ernest, 13, 77, 685
Biblical Studies, 934, 935
Bierce, Ambrose, 910
Big Five, Atomic Energy Veto, 81
Big Four, 90–94
  Colonies disposed of by, 85, 95, 130
  World Bank, 88
Big Inch Pipe, 324, 519
Big Three, Iran and Turkey Conflict, 129, 130
  Potsdam Conference of, 89
Bikini Atoll, 28, 293, 346, 572, 774
Bilateral Trade Agreement, 106

- **Bilbo,** Theodore G., 32, 39, 592, 594, 656
- **Bill of Rights in Guam,** 241
- **Biography,** 885–890
- **Biology,** 797–821
- **Bird,** Junius B., 769
- **Birkhoff,** G. D., 695, 699
- **Birth Rate,** 577, 578, 847–849
  - Wartime Rise, 575
- **Bishop's War Emergency and Relief Committee,** 676, 677
- **Bituminous Coal Research,** 722
  - Miners, 626, 642, 643
  - Strikes in Mines, 540, 642
- **Black,** Hugo L., 40, 42, 45, 48, 50, 51
- **Black Markets,** 409, 410, 530
- **Black Sea Powers,** 101, 102, 130
- **Black Stem Rust,** 491
- **Blackflies,** Control of, 805
- **Blair,** Albert P., 768
- **"Block" Equipment,** 736, 737
- **Blood,** Components of, 779
  - Plasma, 841
  - Transfusion, 833
- **Blood-forming Activity,** 791
- **Blough,** Carman G., 431
- **Bludan,** 128
- **Blue Cross Hospital Insurance Plans,** 453, 841, 845, 1026
- **Blum,** Leon, 107
- **Boarts,** Robert M., 1022
- **Bobbit,** Franklin, 1002
- **Bodensieck,** Julius, 657
- **Boegner,** Marc, 655
- **Bogert,** Charles, 768
- **Bogert,** Clinton L., 327
- **Boiler Insurance,** 451
- **Bolivia,** Military Mission, 123
  - Ores from, 510
  - Pro-Nazi Revolution, 126
- **Bombers,** 343, 344
- **Bombing Tests at Bikini,** 28, 293, 346, 572, 774
- **Bond Market,** 268, 394, 395, 398, 399
  - (*see also* New York Stock Exchange)
- **Bonneville Power Administration,** 322
- **Books,** Importance of, 995, 996
- **Borman,** Martin, 104
- **Borneo,** 118
- **Boston,** Manager Plan, 215, 216
  - Museum of Fine Arts, 955, 957
  - Symphony Orchestra, 971–973
- **Botany,** 810–815
  - Economic (*see* Economic Botany)
- **Boulder Dam,** 711
- **Bowden,** Witt, 621
- **Bowen,** Harold G., 364, 366
- **Bowles,** Chester, 23, 24, 26, 36
- **Bowles,** George A., 443
- **Boxer Rebellion,** Veterans Compensation, 362
- **Boysen Dam,** 313
- **Braden,** Spruille, 122, 124–126
- **Bradley,** Omar N., 356
- **Bradney,** Homer, 174
- **Brain,** the, 860
- **Brazil,** 86, 90
  - Bases Returned to, 122
  - Literature of, 919
  - Loans to, 124
- **Brazilian Portuguese Studies,** 914, 915
- **Brethren,** Church of the, 665, 667, 668
- **Bretton Woods Conference,** 88, 429
  - Financial Institutions, 408, 410, 411
- **Bridge Construction,** 709, 713, 714
- **Bridgman,** P. W., 786
- **Britain** (*see* Great Britain)
- **British Anti-Lewisite,** 833
- **British Empire** (*see* Great Britain)
- **British Foreign Office,** Palestine Problem, 685
- **British Isles,** Books on the, 894
  - Old Masters, 957, 958, 986
  - Poets, 895
  - Quaker Agencies, 671
  - White Paper, 127, 684
- **British-Sponsored Palestine Conference of Jewish and Arab Leaders,** 685
- **British and United States Occupation Zones,** 12, 13
- **Britten,** Benjamin, 976
- **Broadcast Problems,** 742
  - Speech Input Equipment, 742
- **Broadcasting Services,** 734, 735
- **Bronx-Whitestone Bridge,** 713, 714
- **Brookhaven National Laboratory,** 346
- **Brophy,** William A., 597
- **Brossard,** Edgar B., 531
- **Brothers of St. Job,** 682
- **Brown,** Everett S., 1
- **Brown,** N. C., 328
- **Brown,** Robert M., 767
- **Brush,** W. W., 327, 329
- **Buckwheat,** 475
- **Buddhist Sanskrit,** 944
- **Budget,** Battle of the, 207–209
  - Truman's Message on, 1, 2
- **Budget,** Bureau of, 62, 287, 295, 316, 386, 432, 535, 852
- **Buffalo Philharmonic,** 976
- **Building Construction,** 388, 389, 447, 530, 712, 713
  - Code, 220
  - Materials, 608, 609, 708
  - Premium Payment Plans, 608
  - Post-War, 710
  - Restrictions, 453
- **Building Research of the Department of Scientific and Industrial Research,** 447
- **Bulgaria,** 77
  - Church in, 683
  - Elections, 99, 100
  - Peace Treaty, 13, 89, 93, 94, 96, 99
  - Reparations and Territorial Changes, 96
- **Bull Shoals Dam,** 712
- **Bulwinkle Bill,** 545
- **Burglary Insurance,** 451
- **Burma,** Wartime Turbulence, 108
- **Burns,** Treatment of, 833
- **Burton,** Harold H., 42, 48, 51
- **Buses,** Equipment of, 551
  - Objectives of, 555
- **Bush,** Vannevar, 727, 731
- **Bushness,** David, 367
- **Business Conditions,** 525, 526
  - Barometric Trends, 383
  - Economic and, 382–393
  - Failures, 389
  - Finance and, 382–457
  - Indices, 391
  - Philosophy of, 866
  - Reconversion Handicaps, 382, 383
  - Trust, 406–408
- **Business Education,** 1021, 1022
  - Courses for, 1022
  - Federal Funds for, 1021
  - Research Studies, 1021
  - Service Program, 1021
  - Veterans, 1022
- **Butler Art Institute,** 956
- **Butter,** Production, 484, 485
- **Buyers Market,** 708
- **B Vitamins Complex,** 790
- **Byelorussia,** 90, 105
- **Byrd,** Richard E., 767
- **Byrnes,** James F., 11–13, 27, 30, 89, 90, 98, 103, 123, 126, 673, 685
  - Foreign Policy of, 5
  - Resignation of, 13
  - UN Report, 11, 12, 140
  - on Veto Power, 82
- **Byron,** Lord, 905

- **CAA** (*see* Civil Aeronautics Authority)
- **Cabrini,** Mother Frances Xavier, Canonization, 680
- **Cabot,** John M., 125
- **Cadastral Engineering Service,** 58
- **Cadogan,** Sir Alexander, 77
- **Cady,** Frank C., 845
- **Caffrey,** James J., 322
- **Cairo,** 88, 129, 131
- **Calculus of Variations,** 696
- **Caldwell,** Taylor, 873
- **Calhoun Report,** 602
- **California,** Geology, 300
  - Highway Improvement Program, 333, 334
  - Mental Hygiene Legislation, 603
  - Retirement Plan, 169, 170
- **Calvert,** Samuel McCrea, Germany Report of, 657, 658
- **Camera Pickup,** 743
- **Campbell,** Thomas C., 503
- **Canaanite,** Literature, 933, 934
- **Canada,** 82, 90
  - Books on, 891
  - Exports to, 418, 419
  - Gold, 501
  - Observatories, 759
  - Oil Development, 38
- **Canadian Dollar,** 501
- **Canadian Foreign Exchange Control Board,** 501
- **Canal Zone,** Protection of, 123
- **Canals Under Construction,** 314, 315
- **Cancer Control Program,** 40
  - Research, 776
- **Canol Project,** 38
- **Canterbury,** Archbishop, 655
- **Capital Flotation,** 384, 385

Capitalism vs. Communism, 98
Capitalistic System, 15
Capone, Al., 217
Carbides, 719, 720
Carbon-14, 346
Carbon Steel, 505
Cardiac Defects Congenital, 834
Cardinals, New, 680
Cargo Carriers, 558, 560, 561
  Fleet, 745
  Handling, 744, 747
  Service, Status of, 561, 562
Caribbean Areas, 347
Carlson, Margery C., 768
Carnegie Endowment Committee on Atomic Energy, 323
Carnegie Hall, 971
Carnegie Institute, Pittsburgh, 960
Caroline Islands, 85, 140
Carpatho - Russian Parishes, 682, 683
Carpenter, George L., 675
Carriers, 371, 372
Carson, William J., 249
Cascade Dam, 314
Case Bill, 8, 25, 33, 634
Cashmore, John, 214
Castle Films, 989
Casualty Insurance and Corporate Suretyship, 447–454
  Expense Exhibit, 449
  State Legislation, 447, 448
Catholic Church in U. S., 676
Catholic Commission on Intellectual and Cultural Affairs, 679
Catholic Committee for Refugees, 681
Catholic Education Projects, 679
  Press, 679
  Radio Work, 680
  Social Action, 679, 680
  Women's Organization, 680
Cavalry, 345
  Armored, 345
  Dismounted, 345
CCC (*see* Civilian Conservation Corps)
Cecil, Viscount, 141
Cellulose Propionate, 723
Celtic, 945
Census, Bureau of, 190, 256, 258, 264, 267, 268, 291, 297, 641, 645–648, 839, 852
Central America, Highways, 549
Central Arizona Light and Power Co., 727
Central Falls, R. I., Party Policies, 217
Central Luzon, Unrest in, 121
Central Ohio Light and Power Co., 728
Central Radio Propagation Laboratory, 760
Central Valley Project, 712
Central Yiddish Culture Organization, 689
Ceramics Industry, 755, 756
Chadwick, Neutron Discovered by, 781
Chagall, Marc, 959
Chalmers, Henry, 425
Chamberlin, Stephen J., 343
Chamonos, 241
Champlain College, 18
Chapin, Selden, 131
Chapman Prize, 873
Chapultepec, Act of, 3, 122, 123, 126
Charlotte Amalie, 237
Chaucer, Geoffrey, 899
Chemical Ontogeny, 810
  Phylogeny, 810
  Products, 526, 527
  Warfare Research Program, 833
Chemistry, Organic and Inorganic, 786–793
  Fluorine, 787, 788
  of Mustard Gas, 790, 791
  Physical (*see* Physical Chemistry)
  Progress in, 793
  Radio, 787
Chemistry and Physics, 776–796
Chemotherapy, 822, 832
Chen Chi-Ping, 119
Chew, Arthur P., 458
Chicago, Art Institute, 953, 956, 960
  Crime Commission, 217
  Opera, 968, 969
  Political Abuses, 217
  Symphony, 973
  Transit System, 324
  University, Political Science Students, 1028
Child Health Clinic, 244
Child Labor, 648–652
  in Agriculture, 650
  Laws, 636, 650, 651
  Reduction in, 648
  State, 179, 651, 652
  and Youth Employment, 651
Child Psychology, 859
Child Welfare, 604, 605
Children's Bureau, 55, 602, 604, 638, 650, 651, 839, 840, 1035
Chile, Petroleum, 124
  Pro-Nazis in, 126
China, Assistance to, 31
  London Delegation, 89
  Problems, 6, 108
  Trust Territories, 85, 86
  United States Policy in, 6
China - Burma - India Theater, Casualties, 347
Chinch Bugs, 488
Chinese, Communists, 108
  Mining Claims Embargo, 199
  Nationalists, 108
  Trade, Open Door Policy, 11
Chlorine, 331
Chlorodifluoroethane, 793
Chloroquine, 788, 824
Chloro-quinoline, 788
Christian Education, Board of, 674
Christian Life Crusade, 666
Christian Organizations for Democracy, 595
Christian Science, 675, 676
Christian Social Relations, 673
Christians and Jews, International Conference, 662
Chromium, 722
  Plating, 795
Chromosomes, 798, 800, 810
Chronology of International Events, 1946 (*see* International Events, 1946, Chronology of)
Chubb, L. W., 727
Chugash National Forest, 226
Church Activities, 664, 673
  and Compulsory Conscription, 665
  Contributions, 663
  Membership and Growth, 663
  Mergers, 663, 664
  World Service, 655, 656, 669
Church of the Brethren, 665–668
Churches in America, 659, 660
  on Racial Discrimination, 595
  and the Veteran, 664
Church-State Relations, 658
Churchill, Winston, British-American Military Alliance, 16
Cigarettes, Consumption of, 525
  Production of, 462
  Taxes, 256, 277
Cincinnati Art Museum, 955
  Opera, 970
  Symphony, 974
Cinema (*see* Motion Pictures)
CIO (*see* Congress of Industrial Organization)
Cities, Planning Commissions of, 708
Citizens' Budget Commission, 208, 209
Citizens Charter Committee, 216
Citizens, Displaced Persons Committee, 688
Citizens Federal Committee on Education, 1004, 1005
Citizens' Housing Council, 207
City Airport Authority, 207
City Center Productions, 984, 985
City Government (*see* Municipal Government)
City Hall, 206, 214
City Housing Authority, 212
City Parking, 340
City Parks and Recreation Centers, 222, 223
City Planning Commission, 212
Civil Aeronautics Administration, 25, 185, 191, 297
Civil Aeronautics Authority, 571
Civil Aeronautics Board, 160
Civil Air Patrol, 344, 345
Civil Appropriation Act, 378
Civil Production Administration, 9, 35, 62, 320, 324, 345, 387, 388, 433, 434, 507, 508, 607, 609
Civil Rights Board, 10, 691
Civil Service Commission, 160, 167, 168, 591
Civil Service in the United States, 167–171
  Procedures, 167, 168, 219
  Retirement Fund, 29
  Rules, 168
  by States, 169–171
Civil War, 367
  Veterans Compensation, 362
Civilian Conservation Corps, 357, 1009

Civilian Control Commission, 29
Civilian Personnel Administration, 348
Civilian Public Service Camps, 667, 670, 671
Civilian War Assistance, 602
Civilization, Greek, 929
Clark, Mark, 351
Clark, Tom C., 616
Classical Journals, 924, 925
Classical School of the American Academy of Rome, 949, 950
Classics, The, 920, 921
Classification Act, 46
Classified Act, 1923, 58
Classroom Socialization, 859
Clay Club, 964
Clay, Lucius D., 658
Clay Minerals, 755, 756
Clayton Act, 187
Clayton, William, 30
Clemency Boards, 615
Cleveland Orchestra, 973
Clift, Virgil A., 1046
Climatology, Meteorology and, 763–766
  Program for, 766
Clinton Laboratory, 346
"Clothe the War-Stricken" Campaign, 677
Clothing Output, 525
Coachella Canal, 315
Coal, 320, 513
  Production, 387
  Shortage, 320
Coal Miners Disputes, 625
  Pay Increase, 627
  Miners Strike, 22, 33, 320, 504, 718
Coal Mines, Soft (*see* Soft Coal Mines)
Coast Artillery School, 348
Coast and Geodetic Survey, 289, 290, 297, 771, 772
Coast Guard, Oceanographic Program, 772
Coastal Lands, Submerged, 185
Cobalt Trifluoride, 781
Coddling Moth, 487
Coffee, John M., 38
Coffee Production in Hawaii, 231
  in Puerto Rico, 234
Coffin, Robert P. Tristram, 879, 895
Coke Production, 386
Coleridge, Samuel Taylor, 905
Collective Bargaining, 621
College Education (*see also* Higher Education)
College Extension Courses, 1037–1039
Colleges, Bids in, 691
  Emergency, 1018
  Facilities Shortages, 1017, 1018
  Faculty Members, 1018
  Finances for, 1020
  Housing for Students, 1017, 1018
  Post-War Adjustment, 1013, 1014
  Research Activities, 1019
  Student Enrollment, 223, 1014, 1015, 1017, 1018
  Veterans in, 1016, 1017
Collegiate Schools of Nursing, Association of, 1026
Collier, Donald, 768
Collier, John, 597
Collier Trophy Award, 563, 572
Colloid Research, 779
Colmer, William M., 31
Colombia, Expedition to, 769
  Loans to, 124
  Oil in, 515
Color Television, 739, 740
Colorado, Geology, 300
Colorado-Big Thompson Project, 712
Colorado River Basin, 192
  Compact, 193
Columbia Broadcasting System, 739, 740, 972
Columbia, District of, Franchise in, 2
  (*see* District of Columbia)
Columbia River Basin, 312, 315, 711, 712
Columbia Valley Authority, 322
Columbia University, Dental Education at, 846, 847
  Slavic Studies, 936
Columbians, Inc., The, 594, 595, 690
  Charter Revoked, 595
Columbus, Christopher, 232
Columbus, Ohio, Symphony, 976
Columbus, Tenn., Race Riot in, 593
Combined Food Board, 426
Combined Raw Materials Board, 426
Comedies, 981, 982
Comets, New, 706
Commerce, Department of, 58–60, 62, 159, 160
  Insurance as, 447, 448
  Water-borne, 376, 377
Commercial Aviation, 563–572
Commercial Banking, 610
Commercial Loans, 400, 401
Commission of the Churches on International Affairs, 654, 655
Commissions against Discrimination, 596
Commissioners Standard Ordinary Mortality Table, 444
Commodity Credit Corporation, 58, 463, 466, 467
Commodity Exports, 416, 417
  Price Index, 391, 392
  Revenue, 537, 538
Common Defense, Department of, 28
Communism in Germany, 102, 103
Communist Movement, 32
  in Federal Employ, 44
  Vote Issue, 63
Community Problems, 1032
  Self-Survey Analysis, 597
  Transit, 551–556
  War Fund, 247
Comparative Literature, 920
Conciliation Service, 621, 635, 636, 639
Confectionery, Ceiling on, 524, 525
Confraternity of Christian Doctrine, 680
Congregational Christian Church, 664, 668
Congress, Appointments of, 25, 26
  Appropriations, 26, 27
  Debt Limit Reduced, 30
  on Educational Appropriations, 1005
  Elections in, 9, 25
  Foreign Affairs, 30, 31
  Great Britain Loan, 30
  Investigations, 32
  Labor Policy, 634
  Library of, 192, 870, 936, 1052
  Public Power Restrictions, 322
  Public Works Grants-in-Aid, 188
  Republican Control of, 62
  Seventy-ninth, 24, 25, 131
  Truman's Messages to, 1, 2
  Veterans Welfare, 37
  Year in, 24–40
Congress of Industrial Organization, 208, 210, 624, 630–633, 639, 640, 842
  AFL Dispute with, 639
  Political Action Committee, 32
  Utility Workers Strike, 325, 326
Congressional and Administrative Reorganization, 29, 30
Congressional and Presidential Cooperation, 25
Congressional Reorganization Act, 25
Conlon, Charles F., 255
Connecticut, Geology, 300
  Highway Standards, 334, 335
  Light and Power Co., 727
Connecticut Republican State Convention, 24
Conscientious Objectors, 656, 657, 664, 665, 667
Conscription, Compulsory, 665
Constitutional History, 883
Constitutional Law, Supreme Court and, 40–54
Constitutional Problem Investigation Committee, 111, 112
Construction, Employment in, 643
  Engineering and, 708–750
  Supply and Real Estate, 363
Consumer Price Trends, 628, 629
Consumer Education, Conferences on, 1008
Contra Costa Canal, 315
Control of Pullorum Disease of Domestic Poultry, Act for, 191, 192
Controls, Suspension of, 629
Cooke, Juan, 126
Cooperation in Teacher Education, Council on, 1028
Copenhagen, FAO Conference, 87
Copper, 507–509
  Electrowinning of, 794
  Production, 509
  Radioactive, 777

  Stocks, 396
  Strikes in Mines, 508
Copra, 243, 244
Coptic Church, 683
Corcoran Gallery, 962
Core Program, 1009, 1010
Corinth, Archaeological Studies, 949
Corn Crop, 476, 477
Cornish Language Movements, 945
Corporation Audits Division, 433
Corporation and Bank Taxes, 261, 271, 272, 278–280
Corporate Suretyship, Casualty Insurance and, 447–454
Corrections, Department of, 244, 245
Corregidor, 117
Corrosion Control, 330, 331
Corrupt Practices, State Laws, 201, 202
Corrundum Crystals, Synthetic, 755
Cosmic Rays, 760, 761, 783–785
  Data, 761
  Expedition to South America, 784
  Investigation, Committee on, 761
Cost of Living, 453, 625
Costa Rica, Banana Plantations, 124
Cotton Crops, 469–481
  Insects, 489
  Production and Value, 470, 472
  Program, Post-War, 533
  Reduction in, 461
  Yield, 470
Coudert, Jr., Frederick, 214
Council-Manager Government for Cities, 223
Council of State Governments (*see* State Governments, Council of)
Counties, State Aid to, 204
  Veterans Aid, 203
County Government, 202–205
  City Relations, 203
  Constitutional Changes, 202
  Functions, 203
  Legislative Activity, 202
  Manager, 202, 203
  Problems, 204, 205
Covarrubias, Miguel, 893
Covey, Edwin L., 270
Coxey, Jacob S., 30
CPA (*see* Civil Production Administration)
Craig, H. A., 342
Crane, Jocelyn, 770
Crawford, Fred L., 8
Crested Wheat Grass, 815
Crihfield, Brevard E., 173
Crime Control, Integration of, 617
  Prisons and, 614–617
Crime Prevention, 221
Criminal Justice Bill, English, 615
Crippled Children, Services for, 840
Critical Material Shortages, 530
Criticism, Books on, 897
Crittenberger, Willis D., 342
Croats, Origin of Name, 937
Croce, Benedetto, 918
Crop Production, 382
  on Reclamation Projects, 311, 312
  Rotation Practices, 816
Cross Roads Project, 293
Crosser Bill, 545
Croston, John J., 510
Crowther, Bosley, 986
Crude Oil, Price, 514, 517
  World Production, 512
Cruiser Construction, 370, 371, 372
Crystals, Synthesis of, 754
CSO Table (*see* Commissioners Standard Ordinary Mortality Table)
Cuba, 86
  Bases Returned to, 122
  Expedition, 768
  Social Action, 679
  Sugar Crop, 124, 464, 465
Cuenco, Mariano J., 119
Cultural Conflicts, 864
Cultural Organizations for Jews, 689
Cummings, E. E., 895
Cummings, Homer, 616
Cuneiform Studies, 933
Cupro - Nickel - Aluminum Bronze, 722
Curare, 828, 829
Curb Exchange (*see* New York Curb Exchange)
Curley, James Michael, 215
Currencies, Stabilization of, 410
Currency Revaluation, 408
Curry, John Steuart, 959
Cushing, Richard J., 678
Cushman, Robert E., 40
Customs Administrative Laws, 534
Customs Collections, 535–537
  Commissioner of, 56
  Laws, Enforcement of, 540
Cyclotron, 782, 783
Cyrenaica, Italian Colonies, 128
Cytochrome-C, 828
Cytology, 810
Czechoslovakia, 90, 94, 100
  Loan to, 107
  Germany's Threat of War, 104, 105
Czechoslovak-German Settlement, 105

DABNEY, Virginius, 1041, 1047
Dahlgren, B. E., 768
Dairy Industry, The, 481–485
  Domestic Consumption, 485
  Exports, 485
  Prices of, 482, 483
Dallas Symphony, 976
Damaskinos, Archbishop, 683
Dams, Construction of, 312–314, 710, 711, 712
Danish West Indies, 237
Dante, Alighieri, 918
Danube River, Control of, 90, 93, 94
  Navigation, 16
Danzig, 93, 103
Dardanelles, 77, 127, 130
  Disagreement over, 91, 101, 102, 130
Da Vinci, Leonardo, 367
Davidson, J. Leroy, 953
Davis, Chester C., 460
Davis Dam, 314, 711
Davis, Mary Capen, 202
Day, Albert M., 492
DDT, 486–491, 804–806, 841
Deaths by Cause, 849–851
  Classification Statistics, 852, 853
  Rates, 577, 578, 847–849
  Tax Conventions, 280, 281
Debt Adjustment Legislation, 270
  Defaults, 269, 270
De Castro, Morris F., 237
Decontrol Board, 37
  Measures, 629, 630
  on Wages and Prices, 9
Defense and Armament, 342–381
Defense Plant Corporation, 450
Defense Transportation, Office of, 210, 541, 542, 626
Delaware Power and Light Co., 728
Delta Mendota Canal, 315
Democracy, Organizations for, 595
Democratic Party, 21, 63, 206
Dendramis, Vassil, 77
Dengue Fever, 345
Denmark, 86, 237
Dental Care in Health Organizations, 845
Dental Caries, Vitamin K Effect on, 843, 844
Dental Education at Columbia University, 846, 847
Dental Health, Council on, 845
Dental Schools, Educational Program, 843
Dental Service for Veterans, 359
Dentistry, 843–847
  Negroes in, 1045
Denver Symphony, 976
Derleth, August, 876
Des Moines, Retirement Plan, 330
Detroit Institute of Art, 956
  Symphony, 974
Devers, Jacob L., 342, 351, 354
Dewey, Thomas E., 18, 19
  Gubernatorial Campaign, 19
  on Housing, 18, 19
  Recommendations of, 18
Dhahran, 131
Diamonds, Industrial, 755
Dictionaries, 898
Dielectrics, 794, 795
Die-Making, 721
Dies, Martin, 44
Diesel Engine, 718, 719, 721, 744–746
Diphtheria, 837, 838
Diplomatic History, 882, 883
  Personnel, 132, 133
Disabled American Veterans, 38
Disarmament Suggestion of General Assembly, 82
Disciples of Christ, 668, 669
Diseases, Classification Statistics, 852, 853

- **Disney,** L. P., 770
- **Displaced Jews in Europe,** 60, 61
- **Displaced Persons,** Help for, 687, 688
- **District of Columbia,** 160, 244–248
  - Health Conditions, 246
  - Hospital Center, 246
  - Legislation, 247, 248
  - Plebiscite, 244
  - Redevelopment Land Agency, 245, 246
- **District Land Office,** 319
- **Dittmer,** Howard J., 810
- **Divorce Statistics Program,** 853
- **Dodd,** Jr., William E., 44, 45
- **Doenitz,** Karl, 104
- **Domei News Agency,** 113
- **Dominican Republican Earthquake,** 751, 753
- **Don Juan,** Spanish Throne Heir, 11
- **Doolittle,** James E., 211, 346
- **Dormancy of Plants,** 814, 815
- **Dostoevski,** Feodor Mikhailovich, 938, 940
- **Douglas,** William O., 44–47, 51, 52
- **Douglass,** H. Paul, 659, 660
- **Douglass,** Truman B., 668
- **Dow,** Sterling, 949
- **Draft Act Cases,** 43, 44
- **Draft Extension Bill,** 27, 28
- **Draft Law,** 7
  - Violators, 10
- **Drafting Committee of State Officials,** 191
- **Drama,** 896, 979–981
- **Dreiser,** Theodore, 874, 910
- **Drinking Water Standards,** 328, 329
- **Driver Training in High Schools,** 339
- **Drugs,** 859, 860
- **Dry Cells,** 794
- **Dryden,** John, 902, 903
- **Duchesne Tunnel,** 314
- **Duffy,** Edwin T., 978
- **Duke,** Dan, 595
- **Dulles,** John Foster, 139, 655
- **Duluth Symphony,** 976
- **Dun and Bradstreet,** 269, 389
- **Duncan,** Catherine W., 1046
- **Dunn,** Halbert L., 847
- **Duodenal Ulcers,** 836
- **Duquesne Light Co.,** Independent Association, 325
- **Durable Manufactures,** 522–524
  - Strikes, 522
- **Durand,** Asher B., 958
- **Durand,** E. Dana, 531
- **Dushane,** Donald, 1004
- **Dutch Elm Disease,** 490, 491
- **Dutch Film Company,** 990
- **Dutch Troops** in Indonesia, 78
- **Dyer,** Mrs. Randolph H., 669
- **Dynamics,** Topological, 700

- **EARTHQUAKES and Volcanoes,** 751–754
  - in Foreign Areas, 751
  - Magnetic Records, 761
  - in United States and Possessions, 751, 752
- **Eastern Churches,** 681–683
- **Eastern Europe,** 99, 428
- **Eastern Hemisphere,** Commodity Distribution, 417
  - Imports, 421
- **Eastern United States,** Books on, 891
- **Eberharter,** Herman P., 589
- **Eckert,** J. Presper, 349
- **Ecology,** 811
- **Economic Affairs,** Under-Secretary of State, 30
- **Economic Botany,** 815–820
- **Economic and Business Conditions,** 382–393
- **Economic Cycle,** Fluctuations in, 453
- **Economic, Financial and Transit Department of the League of Nations,** 139
- **Economic Foreign Policy,** Committee on, 534
- **Economic Justice,** Interfaith Pronouncement, 661, 662
- **Economic Report,** Joint Committee on the, 34
- **Economic and Social Council,** 617, 633, 639, 640
- **Economic Stabilization Board,** 59
  - Director of, 624
  - Office of, 9, 59, 62
- **Ecuador,** 122, 124
- **Ecumenical Institute,** 655
- **Edge,** Walter E., 326
- **Edison Electric Institute,** 320, 388
- **Edison Medal,** 726
- **Edminster,** Lynn R., 531
- **Education,** 993–1061
  - Adult (*see* Adult Education)
  - in Alaska, 225
  - in American Samoa, 243
  - Board of, 675
  - Business (*see* Business Education)
  - in Cities, 223
  - Classics in, 920, 921
  - Constitutional Provision, 202
  - Curriculum Trends, 1006
  - Dental, 846, 847
  - Elementary (*see* Elementary Education)
  - Engineering (*see* Engineering Education)
  - Federal, 1005
  - in Guam, 242
  - Higher (*see* Higher Education)
  - Intercultural and International, 1012, 1013
  - Jewish, 689
  - Legal (*see* Legal Education)
  - Medical (*see* Medical Education)
  - Negro, 1041–1050
  - Nursing (*see* Nursing Education)
  - Philosophy of, 865, 866
  - for the Professions, 1021–1032
  - for Public Administration, 1027, 1028
  - in Puerto Rico, 234
  - Racial Discrimination, 691
  - Religious, 1034, 1035
  - Secondary (*see* Secondary Education)
  - Sound Systems in, 741
  - State, 197
  - Teacher (*see* Teacher Education)
  - Theological (*see* Theological Education)
  - for Veterans, 174, 175
  - in Virgin Islands, 239
  - for Workers, 1039
- **Education,** International Bureau of, 1013
- **Education,** Office of, 55, 1000, 1005, 1006
- **Educational Film Library Association,** 1040
- **Educational Policies Commission,** 1002, 1009
- **Educational Programs,** Militarized, 1015
- **EEI** (*see* Edison Electric Institute)
- **Egg Production,** 463
- **Egloff,** Max A., 231
- **Egypt,** 86, 128
  - Anti-British Violence, 129
- **Egyptian Publications,** 933
- **Egyptian Sovereignty,** 129
- **Egyptologists,** 933
- **Eidem,** Erling, 655, 671
- **Eighteenth Century,** French Literature, 917
  - Germanic Literature, 912
  - Poets, 904
  - Prose Writers, 904, 905
- **Einstein** on Mass and Energy, 781
- **Eisenhower,** Dwight D., 15, 27, 123, 342, 343
- **Election Campaign,** Tax Issues in, 273, 274
- **Elections of 1946,** 62–72
  - Negro Registration, 592
- **Elections in States,** 198
- **Electoral Legislation,** 199–202
- **Electric Batteries,** 794
- **Electric Bond and Share Co.,** 322
- **Electric Cells,** 794
- **Electric Output,** 382, 388
- **Electric Power Maps,** 291
- **Electric Utilities,** 320
  - Consumption, 527, 528
  - Strike, 325
- **Electrical Engineering,** 726–734
  - Awards, 726, 727
  - Computing Devices, 730, 731
  - Inverters and Rectifiers, 732, 733
  - Maintenance Equipment, 731–734
  - Materials, 730
  - New Projects, 727–729
  - Switching Devices, 729, 730
- **Electrical Equipment Industry,** Work Stoppages, 624
  - Strike, 504
- **Electrical Machinery,** 730
- **Electricity,** Consumption of, 718
- **Electricity,** Terrestrial Magnetism and, 757–763
- **Electrochemistry,** 793–795
- **Electroencephalography,** 860
- **Electrolytes,** Fused, 795
- **Electromagnetic Short-wave Radiation,** 702
- **Electronic Controls,** 721
  - Equipment, 758

  Numerical Integrator and Computer, 349
  Principle of Water Purification, 330
  Techniques, 776
Electronics, 349
  in Geophysical Explorations, 286
Electrons, 783
Electroplating, 795
Electrowinning, 794
Elementary Education, 993–1001
  Curricula, 996–999
  Magazines and Publications, 996
  for Negroes, 1041
  Outlook for, 999–1001
  Philosophy of, 994, 995
Elementary School Enrollments, 1029
Elite Guard, 104
Elizabeth, Age of, 900
Elizalde, Joaquin M., 119
Ellender, Allen J., 23, 589
Elliott Machine, 717
El Salvador, Expedition to, 768
Elston, James S., 439
Embree, Edwin R., 1050
Emergency Colleges, 1018
Emergency Control Administration, 116
Emergency Food Programs, Office of, 460
Emergency Housing Bill, 23
Emergency Housing Program (*see* Housing)
Emergency Management, Office of, 532
Emergency Price Control Act, 51, 61
Emergency Refugee Shelter, 687
Emergency Relief Appropriation Act, 1935, 269
Emotion, 862, 863
Employee Opinion Polls, 858
Employment, 621, 622
  Agriculture, 645
  Construction, 643
  Discrimination in, 591
  Full, 2
  Government, 644, 645
  in Manufacturing, 640–641
  in Mining, 642, 643
  of Minors, 650
  of Negroes, 590–592
  Racial Discrimination, 691
  on Railroads, 643, 644
  Reconversion Shifts in, 622, 623
  Services, State, 180, 183, 184
  Statistics, 581, 582
  in Trade and Utilities, 643, 644
  and Unemployment Statistics, 640–647
  for Veterans, 175, 176
Employment Act, 633
Employment Bill, 1946, 34
Engineering and Construction, 708–750
Engineering Education, 1022, 1023
  Enrollments, 1022
  Measurement and Guidance Project for, 1023
  Teaching Program, 1023
Engineering, Electrical (*see* Electrical Engineering)
  Mechanical (*see* Mechanical Engineering)
  Personnel, 708
  Societies, 715
  Structural (*see* Structural Engineering)
Engineers, Corps of, 288, 290, 312, 363
Engineers Joint Council, 714, 715
Engines, Internal-Combustion, 718, 719
England (*see* Great Britain)
English Criminal Justice Bill, 615
English Language and Literature, 897–910
  Dialect, 897
  Pronunciation, 898
  Usage, 898
  Words and Terms, 897, 898
ENIAC (*see* Electronic Numerical Integrator and Computer)
Entomology, 804–809
Entomology and Plant Quarantine, Bureau of, 486
Epirus, 77
Episcopalian Commission on Approaches to Unity, 663
Episcopalians against Conscription, 665
Equations, Differential, 697
  Theory of, 698
Erdman, Loula Grace, 873
Eritrea, 85
Escheat Cases, Japanese American, 588, 589
Eskimo, the, 869
Esquire **Case,** 41, 46
Essays, 896, 897
Estate and Inheritance Taxes, 262, 280–282
Estates, Small, 407
Estimate, Board of, 206–209, 212
Estonia, 105
Ethiopia, 90
Ethnology, Anthropology and, 868–871
Etymology, 898
Eulogius, Metropolitan, 683
Europe, Art Treasures, 952
  Books on, 893
  Food Relief for, 3
  Homeless Jews, 684
  Hoover Inspection of, 21
  Trade with, 535
  United States and, 98–107
  War Stricken of, 677
European Axis Countries, Horses from, 350
European Civilization, 868, 869
European Corn Borer, 488
European History, 884, 885
European Imports, Revenue, 536–539
European Nations, Loans to, 107
European OSE Institutions, 687
European Theaters of War, 342
  Casualties, 347
Evacuation Claims Commission, 589
Evangelical Church, 663
  Lutheran Church, 671, 672
  and Reformed Church, 664
  United Brethren Church, 670
Evangelism, 672, 674
Evans, Luther H., 1052
Evergood, Philip, 959
Evolution, Plant and Animal, 800, 801, 810
Ewing, W. M., 774
Exceptional Children, Literature on, 998
Excess Profits Tax Council, 439
Excess Securities Coverage for Banks Policy, 451
Exchange, Foreign, 402
Executive Civil Service, Employment in, 169
Executive Government Reorganization, 168
Executive Services, 161, 162
Exploration, American, 767–770
Exploratory Intercoastal Conference, 190, 194
Export Controls, 426, 427
Export-Import Bank, 30, 100, 124, 160, 251, 410
  Lending Authority of, 4
  Loans, 106, 107
Exports, Cash-Purchase, 413
  Commodity, 416, 417
  Composition of, 415, 416
  Distribution, 418
  to Eastern Hemisphere, 417
  Price and Quantity, 412, 413
  United States, 420, 421
  Volume of, 387

FACT-FINDING Boards, 624, 625
Factory Employment, 393, 623, 626, 627, 630
Fair Employment Practices Bill, 197
Fair Employment Practices Committee, 25, 34, 587, 590, 591, 691
Fair Labor Standards Act, 33, 40, 41, 52, 54, 55, 632, 637, 650, 651
Families, School-age Children, 586
  Statistics of, 585–587
Family Living, Courses in, 1008, 1009
Famine Emergency Committee, 21, 460
  Relief Food, 460, 461
FAO (*see* Food and Agricultural Organization)
Far East Advisory Commission, 108, 109
Far East, Books on, 894
  British Possessions, 106
  Famine Conditions in, 21
  International Military Tribunal, 113
  Program, 3
Far Eastern Commission, 108
Farm, Income from Dairy Products, 483
  Labor Situation, 461, 645
  Prices, 628, 629
  Production, 468
  Wage Increase, 627
  Workers, Migratory, 636, 637

- **Farmers, Earnings of,** 465
  - Food Problem, 458
- **Farrington, Joseph,** 589
- **Faroes, Books on the,** 893
- **Farouk, King,** 953
- **Fascism,** 97
- **Fats, Shortage of,** 463
- **FBI** (*see* Federal Bureau of Investigation)
- **FCC** (*see* Federal Communications Commission)
- **FEAC** (*see* Far East Advisory Commission)
- **FEC** (*see* Far Eastern Commission)
- **Federal Administrative Agencies,** 55–62, 1035, 1036
- **Federal Administrative Organization,** 155–165
- **Federal Administrative Procedure Act,** 438
- **Federal Aid to Education,** 679
- **Federal Aid Highway Act,** 332, 335, 338–340, 546–548
- **Federal Airport Act,** 185, 186, 221, 571
  - State Channeling, 191
- **Federal Board of Hospitalization,** 357
- **Federal Board of Surveys and Maps,** 290
- **Federal Bureau of Investigation,** 221
- **Federal Bureau of Prisons,** 614, 616
- **Federal Communications Commission,** 26, 161, 290, 291, 555, 734, 735, 737, 738, 740, 741
- **Federal Corrections Act,** 615
- **Federal Council of Churches of Christ in America,** 595, 597, 656–660, 663, 664, 668, 671, 689, 1035
- **Federal Crop Insurance Corporation,** 58
- **Federal Debt,** 249
- **Federal Deficit,** 249
- **Federal Deposit Insurance Corporation,** 161, 403, 433
- **Federal Emergency Administration of Public Works,** 268, 269
- **Federal Employees,** 9, 10
  - Salaries of, 634
  - Strike Ban, 168
  - Subversive Activities, 44–46
- **Federal Employees Pay Act,** 169
- **Federal Expenditures and Receipts,** 249–252
- **Federal Flood Control Act,** 188
- **Federal Forest Service,** 497
- **Federal Government** (*see also* Government, United States)
  - Public Works Planning, 220, 221
- **Federal Grants-in-Aid,** for Airports, 185, 186
  - for Hospitals, 186
- **Federal Home Loan Bank Administration,** 161, 606, 610
  - System, 610
- **Federal Hospital Construction Act,** 605
- **Federal Housing Administration,** 160, 161, 606, 608, 610–612
  - Problem, 218
- **Federal Income and Profits Taxes,** 270–274
- **Federal Judicial Organization,** 165–167
- **Federal Law, Supremacy of,** 50, 51
- **Federal Loan Agency,** 161
- **Federal Municipal Bankruptcy Act,** 270
- **Federal Nationality Act,** 589
- **Federal Penitentiary,** 615
- **Federal Power Act,** 320
- **Federal Power Commission,** 161, 291, 320–324
- **Federal Prison Industries,** 432
- **Federal Public Housing Authority,** 48, 161, 606, 612–614, 1017
- **Federal Public Works Program,** 238, 239
- **Federal Reserve Banks,** 252, 254, 401, 402
- **Federal Reserve Board,** 160
- **Federal Reserve System,** 252, 403–405, 610
  - Board of Governors, 521, 528
- **Federal Rivers and Harbors Act,** 188
- **Federal Savings and Loan Association,** 610
- **Federal Savings and Loan Insurance Corporation,** 610, 611
- **Federal Security Act,** 173, 605
- **Federal Security Agency,** 8, 30, 33, 55, 57, 161, 168, 602, 638, 839, 840, 852, 1035
- **Federal-State Relations,** 41, 50, 51, 183
  - -City, 224
  - Grant-in-Aid System, 191
- **Federal Surveying and Mapping Agencies,** 287
- **Federal Surveys and Maps,** 286–298
- **Federal Taxation,** 278, 281, 282
- **Federal Tort Claims Act,** 448
- **Federal Trade Commission,** 160
  - Act, 187
- **Federal Unemployment Insurance System for Seamen,** 184
- **Federal Unemployment Tax Act,** 184
- **Federal Welfare Functions, Integration of,** 602
  - Legislation, 601, 602
- **Federal Works Administration,** 37
- **Federal Works Agency,** 161, 188, 238, 547, 602
- **Feeblemindedness,** 857
- **Feed Grains,** 475, 476
- **Felse, Robert,** 958
- **FEPC** (*see* Fair Employment Practices Commission)
- **Fermentation,** 813
- **Ferrous Metal, Corrosion,** 331
  - Scrap, 354
- **Feudalism in Japan,** 114, 115
- **FHA** (*see* Federal Housing Authority)
- **FHLBA** (*see* Federal Home Loan Bank Administration)
- **Fiction,** 873–876
  - Best-Sellers, 873, 874
  - British, 875, 876
- **FIDO Systems** (*see* Fog Intensive, Dispersal of)
- **Field Crops,** 469–481
- **Field Service,** 291
  - Surveying, 58
- **Figuerola, José,** 126
- **Filipinos, Citizenship for,** 589
  - Retail Trade of, 120
  - War Veterans, 117
- **Film Forums,** 1037, 1040
  - Libraries, 989, 1054
- **Films,** 743
- **Finance,** in Alaska, 226
  - Business and, 382–457
  - Committee, 23, 532–534
  - Municipal, 264–270
  - State, 176, 177, 196
  - for Veteran's Administration, 363
- **Finances, for Colleges,** 1020
  - in Hawaii, 231
  - in Puerto Rico, 236, 237
  - of Virgin Islands, 238
- **Financing, Capital,** 384, 385
  - Corporate, 385
- **Fine Arts, Commission of,** 161
- **Fink, Colin G.,** 793
- **Finland, Loan to,** 107
  - Peace Treaty, 13, 90
  - Reparations, 16, 97
- **Fire Department,** 206, 213
- **Fire Insurance,** 445–447
  - Building Coverage, 447
  - Legal Changes, 445, 446
  - Standard Policy, 446
- **Fire Losses,** 221, 445, 446
- **Fire Offices Committee,** 447
- **Fire Prevention Service,** 221, 222
- **First World War,** 85, 92, 97, 136, 137, 361, 363, 546, 791
  - Birth Certificates, 852
  - Laid-up Fleets, 745, 746
  - Mustard Gas in, 826
  - Negroes in, 590, 1047
  - Productivity after, 630
  - Submarine of, 367
  - Tariff Policy Problem, 532
  - Troop Transportation after, 561
  - Veterans of, 356, 357, 360, 362, 439
  - Work Stoppages after, 635
- **Fish, Hamilton,** 30
- **Fish Meal and Oil,** 493
- **Fish and Wildlife Service,** 297 493, 494
- **Fisheries,** 492–494
  - Alaskan, 226
  - Inland, 494
  - Interstate, 193, 194
  - Production, 492
- **Fishery Resources, Conservation of,** 494
- **Fishing Fleets,** 494
- **Fisk University,** 1043
- **Fissionable Material, Government Control,** 29
- **Five - Power Telecommunications Conference,** 736

Flag Vessels, United States, 558–560
Flanagan, John, 964
Fleets, Active Reserve, 369
  of Allied Powers, 561
  of Axis Powers, 561
Fleming, Henry, 770
Fleming, John Adams, 762
Fleming, Philip B., 9
Fletcher, R. V., 540
Flight Charts of the United States, 290
Flood Control, 188, 189
  Maps for, 295
  Program, 711
  Projects, 378, 379
  Surveys, 290
Flood Control Act, 27, 378
Flood Damage, 379, 380
Florida, Geology, 300
  Power and Light Co., 728
  Ringling Museum, 956, 957
Fluorine, 331
  Chemistry, 787, 788
  Compounds, 786
  Handling of, 787
Fluorocarbons, 787, 788
Flushing, L. I., UN Meetings at, 82
Flying Fortresses, 343
FM Broadcasting, 734, 735, 737
Fog Intensive, Dispersal of, 349
  Research, 349
Folic Acid, 825, 826
Folklore, 870, 871, 895
  Polish, 941
  Research in, 871
  Institute of America, 870
Food and Agricultural Organization of UN, 22, 87, 136, 497
Food, Allergies, 826
  Exports, United States, 458, 459
  Frozen, Tests for, 349, 350
  Need, Estimate of, 461
  Outlook, 459
  Prices of, 628, 629
  Products, 524
  Program of President Truman, 459, 460
  Rations, 349, 350
  Relief for Europe and Asia, 3
  Subsidies, 2, 36
  Surpluses, 524
  World Crisis, 458
Foreign Areas, Earthquakes in, 751
Foreign Currency Problems, United States, 409
Foreign and Domestic Commerce, Bureau of, 297
Foreign Economic Policy, 534
Foreign Exchange, 408–411
  Restrictions, 410
Foreign Markets for Motion Pictures, 990
Foreign Ministers, Council of, 11, 12, 16, 89–94, 102, 108
Foreign Missions, Board of, 675
Foreign Missions Conference of North America, 673
Foreign Relations Committee of Senate, 14, 16, 545
Foreign Relations, Office of, 116
Foreign Service Act, 1946, 131–133
Foreign Service Institute, 132, 133
Foreign Service of the United States, 131–135
  Administration of, 135
  Alien Clerks, 135
  Ambassadors and Ministers, 132–134
  Diplomatic Personnel, 132, 133
  Duties, 133
  Officers, 134, 135
  Reorganization, 30
Foreign Trade, 411–425
  Policies, 91, 425–430
  Governmental Interventions, 427, 428
Forests, Alaskan, 226
  Insects, 490, 808, 809
  Program, 496
  Service, 291, 495, 496
  Situation, 495
  Timber Policy, 496
Forest Highway System, 549
Forestry, 495–498
  Management, 319
  Practice, Scientific, 498
Forestry and Food Products, Organization of, 497
Forestry, Joint Congressional Committee, 495
Forrestal, James, 27, 28, 368, 593
Fort Ontario, Oswego, 687
Fort Worth, Opera, 970
Foulds, Linton Harry, 119
FPC (*see* Federal Power Commission)
France, 85, 86
  Colonial System, 127
  Italian Territory Given to, 95
  Jewish Community, 689
  Loan to, 107
  London, Delegation, 89
  Siam Dispute, 80
  Syria-Lebanon Dispute, 78
  Tax Treaties with, 278
  Trust Territories, 85
  War Possibility, 105
Franco-British Agreement on Syria and Lebanon, 78
Franco Regime, Threat of, 79
Frank, Hans, 104
Frankfurter, Felix, 42, 47, 50, 51
Franklin D. Roosevelt Lake, 312, 313
Franklin D. Roosevelt Library, 57
Franklin D. Roosevelt Statue in London, 965
Franklin, Lewis B., 669
Fraser, J. W., 615
Freeman, C. A., 535
Freeport, L. I., Racial Disturbance, 593
Freight Rate Increases, 542, 543, 544
  Traffic, 543, 544
French Bibliography, 915
French Indo-China, Siam Dispute with, 80
French Language, 915, 916
French Literature, 916–918
  Early, 917
French Old Masters Exhibited, 957, 958
French Socialist Party, 107
French, Will, 1002
Frequency Modulation, 734, 737, 738
Freude, Luding, 126
Friant-Kern Canal, 315
Frick, Wilhelm, 104, 105
Friend, Roger B., 804
Friends, Religious Society of, 670
Fritzsche, Hans, 104
Frondel, Clifford, 754
Frozen Foods, 724
Fruit Crops, 463
FSLIC (*see* Federal Savings and Loan Insurance Corporation)
Fuechsel, C. F., 286
Fuels, 716
  Shortage, 207
Full Employment, 34
Fulton, Robert, 367
Funk, Walter, 104, 105
Fur Seals, 493, 494
Furs in Alaska, 227
Furr, William R., 873
Fusion Administration of New York City, 206
F.W.W. (*see* First World War)

GALLUP Poll on Zionism, 685
Gannon, John Mark, 679
Ganz, Rudolph, 972
Gardner, Oliver Max, 10
Garnett, Wilma Leslie, 993
Garrison Dam, 711
Garsson Munitions Combine, 38
Gas (*see* Gasoline; Petroleum)
Gaseous Molecules, 778
Gasoline, 323, 324, 721, 724, 725
  Output, 526
  (*see also* Petroleum)
  Revenues, 323
  Strikes, 325, 326
  Taxes, 256
  Turbines, 715–717, 722, 746
  U. S. Refineries, 518, 526
Gastric Tumors, 799
Gastroenterostomy, 836
Gastrointestinal Tract, 835, 836
Gastroscopy, 836
Gausse Meter, 733
Gavrilo, Patriarch, 683
General Accounting Office, 432
General Assembly of the UN, 74, 655
  Atomic Energy Commission, 80–82
  on Disarmament, 82
  Economic and Social Council, 86
  Flushing, L. I., Headquarters, 82
  Non-Self-Governing Territories, 86
  Relief Recommendations, 83
  (*see also* Security Council; United Nations)
  South Africa Problem, 84
  Spanish Problem, 79, 83
  Trusteeship Problem, 85
  Veto Power, 83

General Educational Development Tests, 1011
General Electric Co., 322, 346, 783
General Land Office, 58, 316–320
  (*see also* Land Management, Bureau of)
General Machinery Corporation, 717
General Motors Corporation, 624, 721
Genes, 797, 798
Genetic Aspects of Atypical Growth, 802
Genetic Stocks, 801, 802
Genetics, Organic Evolution and, 797–804
  of Natural Populations, 797–799
  Plant, 810, 811
Geneva, Convention, 80
  League Possessions, 136, 138
Genic Action, Nature of, 802
Genomes, 799
Geodesy, 297
Geodetic Survey, 291
Geoelectricity, 758, 759
Geographical Names, Board on, 288, 289
Geological Survey, 286, 291–295
Geology, Alabama, 299
  Arizona, 299
  Arkansas, 299
  California, 300
  Colorado, 300
  Connecticut, 300
  Florida, 300
  Georgia, 300
  Idaho, 301
  Illinois, 301, 302
  Indiana, 302
  Iowa, 302
  Kansas, 303
  Kentucky, 303
  Louisiana, 303, 304
  Maine, 304
  Maryland, 304
  Michigan, 304
  Minnesota, 304
  Mississippi, 304, 305
  Missouri, 305
  Montana, 305
  Nebraska, 305, 306
  Nevada, 307
  New Hampshire, 306
  New Jersey, 306
  New Mexico, 306
  New York, 306, 307
  North Carolina, 307
  North Dakota, 307
  Ohio, 307
  Oklahoma, 307, 308
  Oregon, 308
  Pennsylvania, 308
  Rhode Island, 308, 309
  South Dakota, 309
  Tennessee, 309
  Texas, 309
  Vermont, 309
  Virginia, 310
  Washington, 310
  West Virginia, 310
  Wisconsin, 310
  Wyoming, 311
Geomagnetic Research, 757, 758
Geometry, Differential, 697
  Foundations of, 698
  Metric, 697
  Projective, 697, 698
Geophysical Sciences, 751–775
  Programs, 759
George-Barden Act, 1021
George-Deen Act, 1021
George II, King, 101, 683
George VI, King, 954
Georgia, Bureau of Investigation, 594
  Child Labor Law, 603
  Civil Service Board in, 170
  Geology, 300, 301
  Gubernatorial Campaign, 592
  Poll Tax in, 215
  Power Co., 728
Gerald L. K. Smith-Father Terminiello Union, 690
German, Art, 952, 953
  National Council, 103
  Scientific Research, 786, 787, 789
  Teaching of, 914
  Wehrmacht, 350
Germanic Languages and Literatures, 910–914
  Anniversary Publications, 911
  Bibliography, 911
  Contemporary, 913
  Early, 912
  Studies, 945
Germanos, Archbishop, 655
Germans in America, 913, 914
Germany, American and British Zones, 429
  Army-Sponsored Art Exhibitions, 952
  Calvert's Report on, 657, 658
  Conflict over, 91, 102, 103
  Currency Conditions, 410
  Disarmament of, 715
  Economic Revival, 12, 102
  Gold Lootings of, 501
  Occupied Zones, 102, 103, 658, 715
  Peace Preparations, 97, 98
  Penal Affairs in, 617
  Submarines of, 365, 366
  Territorial Changes, 103
  Trading with, 428, 429
  War Leaders, Trial of, 103, 104
  War Plans, 105, 106
  War Relief Services, 677
Germinal Mutations, 799, 800
Germination of Plants, 814, 815
Ghavam, Ahmad, 76, 130
Gibbons, George R., 507
G.I. Bill of Rights, 31, 173, 176, 358, 679, 843, 880, 994, 1010
  Vocational Training Provisions, 219
Gift Taxes, 262
Gilbert, Harold N., 353
Gilchrist, John, 676
Gilchrist, Robert, 1001
Gildersleeve, Virginia, 655
Gillem, Jr., Alvin, 592
Gillem Report, 592, 593
G.I.'s, War Service Insurance for, 37
Glass Insurance, 452
Glass Manufacturing Industries, Strikes, 452
Glennon, John J., 680
Godhavn Observatory, 759
Goering, Hermann, Death of, 103, 105
Goethe, Johann Wolfgang, 912
Gold, 500–503, 776
  Alaska Mining, 227
  German Lootings of, 501
  Monetary Stock, 501
  Price, 501
  Reserves, 501
  United States Stock, 402, 403, 410, 411
  World Production, 500
Golden Age of Literature, 918, 919
Golden Gate Bridge, 710
Goldwyn, Samuel, 986
Gomez of Venezuela, 769
Good Engineering Practice for Broadcast Stations, 290
Good Neighbor, Fleet, 745
  Policy, 122, 1052
Gordon, Buford F., 673
Gordon, Myron, 797
Gordon, Ruth, 981
Gorky, Maxim, 938, 939
Gossett Bill, 688
Government of Occupied Areas, School for, 348
Government, United States, Employment in, 644, 645
  Printing Office, 291
  Reorganization, 8
  Reports, Office of, 62
  U. S. (*see also* United States)
Governmental Accounting and Auditing, 432, 433
Governmental Research Institute, 216
Governors Council, 183, 185, 186
  National Conference of, 19
Governorship Succession, 195
Grace, Alonzo G., 1010
Graduate Schools for Negroes 1045, 1046
Grain Crops, 469–481
  Statistics, 473
Granby Dam, 314
Grand Coulee Dam, 313, 711
  Irrigation System, 718
Granger, Lester B., 593
Grant-in-Aid Programs, 55
Grasse River Bridge, 713
Grasshoppers, 488
Graves, Henry S., 497, 498
Gravlin, Leslie M., 216
Grazing Service, 58, 317
Great Britain, 85, 86
  Arab Friendship, 127
  Art Sent by, 953
  Astronomical Research, 702
  Atomic Bomb Plan, 14
  Balkan Crisis, 77
  and the Dardanelles, 101, 102
  Diesel Powered Vessels for, 745
  Financial Agreement with, 4
  on Fire Grading of Buildings, 447
  Flag Ships, 561
  Fleet, 561
  Foreign Ministers Meeting, 90
  on Franco Regime, 79
  and Greece, 77

  Indonesia, 78
  Iran Oil Interest, 74
  Loan to, 4, 11, 22, 25, 30, 106
  Palestine Policy, 127, 684, 685
  Silver in, 502
  and Soviet Union Compromise, 77
  Syria-Lebanon Dispute, 78
  Tariff Commission Report, 533
  Trust Territories, 85
  Veto Power in UN, 80
  War Possibility, 105
Great Lakes, 375
  Fisheries, 189, 194, 494
Greece, 76–78, 90, 100, 101
  Balkan Crisis, 77, 78
  British Troops in, 77, 101
  Elections in, 100, 101
  "Incidents" in, 101
  Loan to, 107
  Reparations to, 95
  and the UN, 77, 78
Greek-Albanian Frontier, 77
Greek, Archaeology, 930, 931, 949
  Art, 930, 931
  Church in America, Convention, 681, 682
  Dance, 932
  Dialect, 944
  Inscriptions, 931
  Language, 925, 926
  Literature, 925–932
  Orthodox Church, 681, 682
  Philosophy, 928, 929
  Poetry, 926, 927
  Religion, 929, 930
  War Relief Association, 22
Greeley, William B., 498
Green Act, 502
Greenland, Observatory, 759
Gregg, John P., 531
Grégoire, Henri, 937
Gregory, E. B., 26
Gregory, Metropolitan, 683
Griffin, Bernard, 680
Griffin, Mildred F., 282
Gromyko, Andrei A., 75, 81, 129
Gruening, Ernest, 225
Guam, 241, 242
  Bank of, 242
  Education, 242
  Government of, 241, 242
  Health and Medicine, 242
  Japanese Invasion of, 241
  Rebuilding of, 241
Guatemala, Banana Plantations, 124
Guerrero, José Gustavo, 88
Guertin Committee, 443
Guggenheim, Harry F., 211
Guidance Centers for Veterans, 1010
Gumilev, Nicholas, 939
Gypsy Moth, 489, 490

HACKWORTH, Green H., 140
Hadassah, 686
Hadsel, Winifred N., 74, 89, 98
Hadzsits, George Depue, 920
Hague, The, 88
  Tribunal, 140
Hague, Frank, 217
Haiduck, Andrew F., 563
Hail, Maple T., 403
Hall, Charles P., 343
Halleck, Charles A., 19
Hambro, Carl J., 138
Hampton Institute, 1046–1048
Handy, Thomas T., 343
Hanson, Walter E., 708
Harbors, Waterways and, 373–380
  Improvements, 373, 374
  Projects, 375, 376
Hardy, Edward R., 445
Hardy, Jr., E. R., 681
Harper Prize, 873
Harradon, H. D., 757
Harriet Monroe Prizes, 877
Harriman, W. Averell, 5, 26
Harris, David E., 727
Harris, Joel Chandler, 910
Harris, Roy V., 592
Harrisburg, Pa., Symphony, 976
Harrison, Earl J., 684, 687
Harrison, W. H., 727
Hartford, Conn., Manager Plan, 216
Harvard Report, 1002, 1003
Hastie, William H., 237
Hawaii, 228–231
  Area and Population, 229
  Army and Navy, 35, 231
  Coffee Production, 231
  Development, 228, 229
  Finance, 231
  Government, 229
  Industry and Trade, 230
  Magnetic Observatory, 759
  Martial Rule, 40–42
  Pineapple Companies, 230
  Seismic Seawave, 751, 752
  Statehood for, 2, 229
  Sugar Crop, 230
Hawaiian Organic Act, 1900, 42
Hawley, Paul R., 842
Hay, 478
Hayes, Helen, 981
Hays, George P., 354
Health, Agencies, 838, 840, 841
  in Alaska, 227
  of the American People, 837
  Dental Care Organizations, 845
  Education, 1004
  Insurance, 448, 452, 453
  League of Nations Center, 836
  Negro Education, 1049
  Public (*see also* Public Health)
  in Puerto Rico, 234
  School, 1007, 1008
  State Rules, 198
  in Virgin Islands, 238
Hearing, 861
Heart Mountain, 312
Heating, 717, 718, 725, 726
Hébert, F. E., 245
Hebrew Sheltering and Immigrant Aid Society, 686, 687
Hecker, Guy C., 551
Helium, Liquid, 785, 786
Hellenic Church (*see* Greek Orthodox Church)
Hellman, Lillian, 980
Hemispheric Insurance Conference, 445
Hemorrhage, 831
Hemostatic Agents, Local, 831, 832
Henderson, Leon W., 127
Henderson, M. T., 815
Heredity, Extranuclear Factors, 802
Hernaez, Pedro, 119
Hess, Dame Myra, 972
Hess, Rudolf, 104
Heterosis, 800
Heterozygotes, 798
HIAS (*see* Hebrew Sheltering and Immigrant Aid Society)
High Museum of Art, Atlanta, 960
High School Curriculum, 649
Higher Education, 1013–1020
  (*see also* Colleges)
  Commission on, 1019
  Curriculum, 1019, 1020
  Enrollment, 1016
  Federal Government Coopertion, 1019
  Future of, 1020
  for Negroes, 1042, 1043
  Weakening of, 1014
Highway Act, 1944, 546–548
Highway Research Board, 335, 338
Highway Safety Conference, 336, 337
Highways, 546–551
  Construction, 708
  Express, 547, 548
  Improvement Plan, 333
  Legislation, 338, 339
  Program, 546, 547
  Reconstruction, 313
  Research Needs, 335
  Traffic, Street and, 333–340
  Transportation, 332
Higinbotham, W. A., 373
Hill-Burton Act, 186, 839
Hill, Lister, 1005
Hinds, Julian, 331
Hirohito, Emperor, 108, 681
  Political Status of, 110
Hiroshima, Atom Bombs on, 827
Histamine, 826
Historical Studies, 880
Histories, Illustrated, 881
History, 880–885, 929
  in Latin Literature, 923, 924
  Local, 883, 884
Hitler, Adolf, 105
Hittite, 943
Hobbs Anti-Racketeering Bill, 33
Hoboken, N. J., Politics in, 217, 218
Hodges, Courtney H., 354
Hodges, John C., 1022
Hodgkin's Disease, 827, 828, 833
Hokkaido Coal Strike, 114
HOLC (*see* Home Owners Loan Corporation)
Holding Company Act, 322
Holland, John P., 367
Holliday, Houghton, 843
Hollywood, British Competition with, 986
  Labor Problems, 985

  Talent, 989, 990
Holmes, Oliver Wendell, 47
Holy Land, Jewish State, 5
Home-Making, Education for, 999
Home Missions Council, 660, 661
Home Owners Loan Corporation, 610, 611
Home Study Courses, 1012
Homes, 926
Homestead Lands for Veterans, 312
Homma, Masaharu, Military Trial, 41–43, 113, 117
Homozygotes, 798
Honduras, Banana Plantations, 124
  Expedition to, 768
Honolulu, 228–230
Hoosier Folklore Society, 871
Hoover, Herbert C., 21, 22, 460
  European and Asiatic Visits, 3, 21
  in Latin America, 22
Hoover, J. Edgar, 999
Hoover Medal, 727
Hoover, Thomas N., 62
Hord, Donald, 963
Horsetooth Reservoir, 314
Hospital Construction Act, 221, 602
Hospitals, Grants-in-Aid for, 186
  Inspection of, 180
  Internship, 1025, 1026
  Legislation, 191, 198
  Nurses, Shortage of, 1026
  Services, 842
  Sound Systems for, 742
Hospitalization, Federal Board, 160
Hot Springs, Va., FAO Conference, 87
Hot-Water Tanks, 332
House of Representatives, 163–165
  Appropriations Committee, 28, 39
  Banking and Currency Committee, 36
  Expenditures, Committee, 32
  Foreign Affairs Committee, 31
  Members of, 163–165
  Military Affairs, Committee, 27
  Naval Committee, 28
  Roads Committee, 32
  Un - American Activities, Committee, 32
  Vacancies filled, 200
  Ways and Means Committee, 29
House Wiring, 729
Household Appliances, 527, 528
Houser, H. A., 243
Housing, 31, 32, 212, 213, 606–614
  Agency, 2
  Aluminum for, 508
  Army, 350
  Construction Program, 327
  Curbs Ended, 9
  Dewey on, 18, 19
  for College Students, 1017, 1018
  Emergency, 8, 206, 607
  Expediter, 606–609
  Insurance Fund, 612
  Negro, 589, 590
  Plans for Cities, 220
  Policy, 842
  Priority Ratings, 607
  Schools Program, 995
  for Veterans, 173, 175, 609, 610
Housing Bill, Emergency, 31, 32, 608
Howard, Elizabeth Metzger, 873
Howells, William Dean, 909
Howson, Louis R., 327
Huancayo Magnetic Observatory, 758, 759
Hudson, Manley O., 141
Huebner, S. S., 382, 394
Hughes, Charles E., 40, 47
Hughes, Everett S., 343
Hukbalahap Organization, 121
Hulin, Wilbur S., 856
Hull, Cordell, 35
Human Relations, Improved, 1007
Human Rights Commission of the United Nations Economic and Social Council, 17
Humanistic Social Studies, 1022, 1023
Hungary, 89, 93, 94
  Peace Treaty, 13
  Territorial Changes, 96
Hunter, H. Reid, 1046
Huntington, Archer M., 964
Hurley, Joseph P., 681
Hutcheson, Joseph C., 685
Hybrids, 798, 799
Hyde, Rosel H., 734
Hydraulics, 718
Hydrocarbons, 787, 788
Hydroelectric Equipment, 718
Hydrogen Atom, 778
Hydrographic Office, 57, 290, 293, 295, 770, 771
  Surveys, 289
Hyperthyroidism, 776

IATSE (*see* International Alliance of Theatrical Stage Employes)
I.B.M. (*see* International Business Machine)
Ibn Saud, King, 5, 685
ICC (*see* Interstate Commerce Commission)
Ice Atlas of Northern Hemisphere, 293
Iceland, 80
Icelandic Studies, 945
Ickes, Harold L., 2, 26, 229
Ickes-Pauley Controversy, 2, 3, 26
Idaho, Geology, 301
Ideas, History of, 867, 868
Idlewide Airport, 207, 211
Illinois, Congressional Districting, 41, 49, 50
  Geology, 301, 302
ILO (*see* International Labor Office)
Image Orthicon Cameras, 737–739, 743
Immigration, Curbs on, 688
  of Jews to America, 687, 688
  and Naturalization Service, 588
  Quota Limitations, 28
Impelliteri, Vincent, 206
Imperial Rule Assistance Association, 111
Implications of Armed Services Educational Programs, Commission on, 1010
Imports, 419, 422–424
  Dutiable, 536, 537, 538
  Price and Quantity, 412, 413
  Trade, 419
  Volume of, 387
Incomes, Family, 272, 273
  Net, 435, 436
  Taxation, 256, 273, 437–439
Inconel, 722
India, 86, 90
  Books on, 894
  Britain's Mediterranean Sea Route to, 77
  Silver Substitute in, 502
  Stricken Areas of, 21
Indian Affairs, American, 597–599
  Activities, 598, 599
  Citizenship for, 589
  Education, 599
  Health, 599
  Legislation, 599
  Office of, 296, 597, 599
  Reservations, 598
  Service, 598, 599
  Veterans Problems, 598
Indian Claims Commission, Congress of, 599
Indian Problem in South Africa, 84
Indian Wars, Veterans Compensations, 362
Indiana, Geology, 302
  Public Service Co. of, 728
Indianapolis Symphony, 975
Indic Philology, 944
Indo-China, Wartime Turbulence, 108
Indo - European Linguistics, 942–945
Indo-Iranian, 944
Indonesia, British and Dutch Clash in, 78
  Wartime Turbulence, 108
Industrial College of the Armed Forces, 346, 347
Industrial Development Department, 727
  Heating, 733
Industrial Disputes, Fact Finding in, 33
Industrial Front, Developments on, 842
Industrial Medical Services, 842
Industrial Meteorology, 766
Industrial Peace, 529
Industrial Production, 390
  Index of, 521, 522
Industrial Relations Center, 1028
  in States, 636
Industrial Share Prices, 395, 396
Industrialists, Biographies, 888
Industries, Labor Conditions in, 391, 392, 640

Industry, Art Patronage by, 954, 955
  Borrowing of, 400
Infant Mortality, 851
Inflation, 2, 9, 254, 255, 409, 410
Infrared Lamps, 733
Ingalls, Walter Renton, 500, 506
Ingles, Henry C., 352
Inglis, Harry S., 343
Inheritance Taxes, Estate and, 262, 280–282
Injuries, Classification Statistics of, 852, 853
Inland Waterways, 375
  Commerce, 376, 377
Inness, George, 958
Inorganic Chemistry, Organic and, 786–793
Insect Pests and Plant Quarantines, 485–491
  Control Projects, 486
  Diseases of, 807, 808
  Food Habits, 808
  Injury, Plant Resistance to, 809
  Population, Ecology of, 808, 809
  Repellents, 486, 487, 792
  Stored-Grain, 489
Insecticidal Research, 486, 804
Institute for Advanced Study, 139
Institute of Life Insurance, 442–444
  Death Benefits paid, 443
Institute of Social Sciences, 597
Institute of Traffic Engineers, 336
Instruments, Development of, 724
Insurance Act, 1946, 360
Insurance Code, 448
  as Commerce, 447, 448
  Commissioners of the United States, 444
  Deposit, 403
  Fire (*see* Fire Insurance)
  Legislation, 187, 188
  Life (*see* Life Insurance)
  Premiums Written, 454
  Taxation, States Rights, 444, 445
  Unemployment, 647
  Veterans, 360, 361
  Workmen's Compensation, 448
Intelligence, 862
Intensive Language Program, 944
Inter-American Affairs, Institute of, 839
Inter-American Affairs, Office of, 60
Inter-American Cooperation Act, 3
Inter-American Defense, 3
  Board, 123
Inter-American Federation of Societies of Authors and Composers, 966
Inter-American Highway, 549
Inter-American Military Cooperation, 123
Inter-American Traffic, Treaty on, 31
Intercollegiate Prize, 873
Intercultural Education, 1012, 1013
  Bureau for, 1007
  Programs for, 1007
Interdenominational Activities, 654–662
Interfaith Pronouncements, 661, 662
Intergovernmental Committee for Refugees, 687
Intergovernmental Relations, Council on, 192
Interior, Department of the, 35, 57, 58, 61, 158, 159
Interior, Secretary of, 57, 625
Internal Revenue, Bureau of, 437
  Code, 437, 438
  Taxation, 438, 439
International Affairs Affecting the United States, 74–154
International Affairs, Commission of the Churches on, 654, 655
International Alliance of Theatrical Stage Employes, 985
International Association of Machinists, 632
International Atomic Development Authority, 14
International Bank for Reconstruction and Development, 88, 192, 402, 410, 411, 429
International Boundary Commission, 294
International Business Machines, 793, 953
International Chamber of Commerce, 86
International Civil Aviation Organization, 31, 116
International Confederation of Societies of Authors and Composers, 966
International Conferences, 852, 853
  of Christians and Jews, 662
  on Trade and Employment, 429, 430
International Cooperative Alliance, 86
International Council of Religious Education, 660
International Council of Scientific Unions, 762
International Court of Justice, 88, 137
International Education, 1012, 1013
International Events, 1946, Chronology, 141–153
International Federation of Trade Unions, 639
International Food Agency, 22
International Health Services, 836, 837, 844
International Ice Patrol, 772
International Institute of the Amazon, 87
International Labor Office, 34, 86, 136, 137, 637, 639, 640, 679
  Representation in, 639
  UN Agreements with, 87
International Library Activities, 1052
International List of Causes of Death, 852, 853
International Military Tribunal for the Far East, 109
International Missionary Council, 654
International Monetary and Financial Problems, Council on, 4, 30
International Monetary Fund, 402, 408, 410, 411, 428, 429
International Nickel Co., 503
International Organization, State Interest in, 189, 190
International Penal and Penitentiary Commission, 617
International Pictures, 989
International Problems, Church Attitude on, 654
International Prosecution Section, 109
International Refugee Organization, 6, 17, 83, 84, 86
International Relations, Books on, 1053
International Student Center for American Negroes, 1043
International Technical Conference of Engineers, 715
International Telecommunications Conferences, 735, 736
International Tin Conference, 511
International Trade, Factors in, 425
  Organization, 86
  Policies, 533
  Reports on, 534
International Traffic, 540
International Union of Geodesy and Geophysics, 762
International Vital Statistics Cooperative Program, 853
Interstate Commerce Commission, 160, 528, 542, 543, 545, 561
  Insurance as, 447, 448
Interstate Compact Administrators Association, for the Supervision of Parolees and Probationers, 193
Interstate Conference of Employment Security Agencies, 184
Interstate Cooperation, Development of, 192
Interstate Fisheries, 193, 194
Interstate Highways, 332, 333, 338, 547, 548
Interstate Maritime Reciprocal Arrangement, 184
Interstate Oil Compact Commission, 189, 193
Interstate Parolee Compact, 193
Interstate Relations of the States, National and, 182–194

Interstate Water Compacts, 192, 193
Intracoastal Waterways, 374, 375
Inventory Pricing, 436, 437
Iodine, Radioactive, 776, 777, 833, 834
Ionosphere, 761, 762
Inospheric Laboratory, Kensington, 761
  Stations, 762
Iowa, Art Show, 960
  Geology, 302
Iran, 127
  Big Three Conflict, 129, 130
  Oil Resources, 74, 75
  Soviet Union Dispute, 74–76
Iranian Case before the UN, 12
  Problem, 129, 130
Iraq, 85, 128, 131
Ireland, 80
IRO (*see* International Refugee Organization)
Iron, 503–506
  Industry, Dispute, 624
  Nickel Alloys, 722
  Operations, 388
Irrigation, Reclamation and, 311–316
  Projects, 711
Isern, A. Fernos, 233
Isomagnetic Charts, 758
Isotopes, Radioactive, 776, 777, 833, 834
  Separation of, 716, 777
Italian, Bibliography, 915
  Colonies, 85, 90, 130, 131
  Department of Antiquities, 949
  Language, 916, 943
  Literature, 918
  Republic, 19
Italian Somaliland, 85
Italo-Yugoslav Conflict, 12, 92, 93
Italy, 85
  Loan to, 107
  Military Restrictions, 95, 96
  Peace Treaties with, 12, 13, 89, 95, 96
  Territorial Changes, 95
  War Reparations, 94, 96
Ivancho, Daniel, 680

JACKSON, Robert H., 40, 104
Jails, Local, 616
Jaklitsch, Jr., Joseph J., 714
James, Henry, 909, 910
Japan, Allied Occupation, 107
  Central Liaison Office, 109
  Communists in, 111, 114
  Constitution, 110–112
  Constitutional Government, 112
  Currency Conditions, 410
  Demobilization Ministry, 110
  Democratization of, 113
  Diet, 111, 114, 115
  Disarmament Treaty, 12, 715
  Economic Conditions, 115
  Education Mission in, 113
  Foreign Policy, 115
  Gold of, 501
  Labor Unions, 114
  Land Reform Act of, 114, 115
  Liberals and Progressives, 111
  Pearl Harbor Attack, 35
  Penal Affairs in, 617
  Post-Surrender Government, 110
  Post-War Elections, 111
  Reparations, 115
  Retention of the Emperor, 110
  Social Democrats, 111
  Trading with, 428, 429
  Unified, 108
  War Ministry, 110
  War Renounced, 112
  Woman's Party, 111
Japan Occupied, 107–115
  American Policy, 108
  Inter-Allied Controls, 108, 109
  Military Government in, 109
Japanese, Archaeological Trophies, 951
  Beetle, 487, 488
  Bill of Rights, 112
  Cabinet, 110, 111
  Congress of Industrial Organizations, 114
  Educational System, 1043
  Employment Discrimination, 588
  Hawaiian Propaganda against, 228
  Hierarchy, 681
  Invasion of Guam, 241
  Mandated Islands, 140
  Military Trials, 41, 113
  Newspapers, 113
  Party Politics, 111
  War Prisoners, 352
Japanese American, Escheat Cases, 588, 589
  Property Owners, 558
  Indemnification for, 589
  Resettlement of, 588
"Jato," 344
JDC (*see* Joint Distribution Committee)
Jefferson, Thomas, Land Ordinances, 317
Jenkins, Thomas, 19
Jente, Richard, 911
Jersey City, Politics in, 217
Jerusalem, Oriental Research, 950
Jewell Ridge Coal Company Case, 637
Jewish Communal Affairs, Judaism and, 684–691
  Book Council of America, 689
  Casualties, 688
  Cultural Societies, 689
  Displaced Persons, 5, 687
  Education, 689
  Immigration, 127, 684
  Industrial Production, 129
  Terrorism, 127
  Liturgical Music, 689
  Musical Culture, 689
  Publication Society of America, 689
  Religious Activities, 688, 689
  Schools, 689
  Social Welfare, 688
  State in Palestine, 128, 684, 685
  Welfare Agencies, 587
  Welfare Board, 688
Jews, Health of, 687
Jodl, Alfred, 104, 105
Johannesburg, 85
John Fritz Medal, 727
Johnson, Alvanley, 7
Johnson, Charles S., 1043
Johnson, F. Ernest, 663
Johnson, Fred W., 316
Johnson, Herschel V., 78
Johnson, Jotham, 949
Johnston, Eric, 30
Joint Anti-Fascist Refugee Committee, 32
Joint Army-Navy Intelligence Studies, 772
Joint Distribution Committee, 686
Joint Fact-Finding Committee on Highways, Streets and Bridges, 333, 334
Jones, David B., 1045
Jones, Galen, 1006
Jonson, Ben, 900, 901
Jordan Area, Archaeology, 932
Joseph, Lazarus, 206
Judaism and Jewish Communal Affairs, 684–691
  (*see also* Jewish Communal Affairs)
Julius Rosenwald Fund, 1050
Juilliard School of Music, 967
Juries, Federal, 48, 49
Jury Service for Women, 199
Just and Durable Peace, Commission on, 658
Justice, Department of, 35, 157, 158
Juvenile Delinquency, 616, 617, 999

KAISER-FRASER Corporation, 507, 508
Kaltenbrunner, Ernst, 104
Kansas City Philharmonic, 975
Kansas, Geology, 302, 303
Kassell, Mortimer M., 280
Kasten, W. H., 343
Keats, John, 905
Kehoe, Karon, 873
Keitel, Wilhelm, Death of, 104, 105
Keller, J. O., 1032
Kellogg-Briand Pact, 104
Kelly, Edward Joseph, 217
Kelly, Frank, 214
Kenai Peninsula, 318
Kennelly, Martin, 217
Kentucky, Civil Service, 190
  Geology, 303
  Tax Laws, 279
Kerbey, McFall, 890
Kerr Committee, 44
"Kickback" Act, 638
Kilgore Committee, 38
Kilgore-Magnuson Bill, 839
Kimmel, Husband E., 35
Kirls, Norman T., 343
Klamath Project, 312
Klancar, Anthony J., 935
Klein, Henry, 331
Knolls Atomic Power Laboratory, 322, 346
Knox, Frank, 35
Koiso, 111

- **Korea,** Division in, 108
  - Evacuation of, 673
- **Kortes Dam,** 312
- **Koster,** Donald Nelson, 897
- **Koussevitzky,** Serge, 972, 976
- **Kremlin,** the, 106
- **Kress Art Gift,** 952, 955
- **Kreymborg,** Alfred, 878
- **Kriesel,** Herbert C., 481
- **Krug,** Julius A., 8, 26, 589
  - Nomination of, 3
- **Krug-Lewis Contract,** 631
- **Ku Klux Klan,** 594, 595, 689, 690
- **Kungchantang,** 108
- **Kuomintang,** 108

- **LABOR,** 33, 34, 621–653
  - Administrative Changes Affecting, 638
  - Child (*see* Child Labor)
  - Church Attitude to, 657
  - Committee, 23
  - Conditions and Legislation, 621–640
  - Court Decisions, 637, 638
  - Disputes, Adjustment, 635, 636
  - Education, 638, 1039
  - Federal Laws for, 633, 634
  - Force, 582, 641
  - Health Programs for, 842
  - in Industry, 392, 393
  - in Movie Industry, 985
  - Organized, Reaction against, 197
  - Press, 633
  - in Steel Industry, 504
  - Supply, 645–647
  - in Transit Field, 553, 554
  - Unrest, 540
  - Wage Demands of, 623
- **Labor,** Department of, 33, 160, 326, 602, 635, 636, 638, 639
  - Education Service, 1039
- **Labor Legislation,** 7, 8, 178, 179, 621–653
  - State, 636, 637
  - Taft on, 22, 23
- **Labor-Management,** Advisory Committee, 621, 635, 636
  - Conference, 623
  - Disputes, 623, 624
  - Relationship of, 1
- **Labor Organizations,** 632, 633
- **Labor Party Proposals,** 616
- **Labor in Puerto Rico,** 235
- **Labor Relations Division,** Special, 211
- **Labor Standards,** Division of, 638, 651
- **Labor Statistics,** Bureau of, 466, 519, 627, 639, 642, 643
- **La Follette,** Jr., Robert M., 29
- **La Guardia Field,** 211
- **La Guardia,** Fiorella, 206, 207, 210, 213
- **Laird,** Wilson M., 298
- **Lake Survey Offices,** 294
- **Lammel Medal,** 727
- **Land Act,** 235, 236
- **Land Administration Problems,** 317
- **Land Authority,** 236
- **Land Grant Act,** 543
- **Land-Grant Colleges for Negroes,** 1044
- **Land Management,** Bureau of, 57, 289, 317
- **Land Office,** Reorganization, 317
- **Land and Property Taxes,** 274–278
- **Land Reform Act in Japan,** 115
- **Lane,** George S., 942
- **Lange,** Oscar, 79, 80
- **Language,** Literature and, 873–948
- **Lanham Act,** 223, 246, 612
- **Lanier,** Sidney, 895
- **Larkin,** Thomas B., 343
- **Latex,** 723
- **Latin America,** United States and, 122–126
  - Air Transportation, 125
  - Art Exchange, 954
  - Bases Returned to, 122
  - Books, 892, 893, 1052, 1053
  - Cultural Cooperation, 125
  - Economic Collaboration, 123, 124
  - Hoover Visits, 3, 22
  - Indians, 869
  - Shipping Facilities, 124
  - Tariff Commission Report on, 533
  - Trade Agreements, 124
- **Latin Linguistics,** 921, 922, 944
- **Latin Literature,** 920–925
  - Foreign Books, 925
  - Law, 923, 924
  - Philosophy and Religion, 922, 923
- **Lattice Theory,** 699
- **Latvia,** 105
- **Law in Latin Literature,** 923, 924
- **Law Schools,** 1023, 1024
  - Association of, 1024
  - Curriculum, 1024
- **Lead,** 509, 510
  - Production of, 509
  - Sulphide, 702
- **League of Nations,** 87, 88
  - Assets, 136–138
  - Charter, 129
  - Court of Honor, 137
  - Dissolution of the, 135–141
  - Mandates Commission, 86
  - Report, 137, 138
  - Transition, 136, 137
  - UN Takes Over, 135–137
- **Learning,** 860, 861
- **Lebanon,** 127, 128
- **Lebanon-Syria** Dispute with France and Great Britain, 78
- **Legal Education,** 1023–1024
  - Teaching Methods, 1024
- **Le Loup,** Marcel, 497
- **Lend Lease,** 10
  - Fiscal Function, 60
  - Merchandise, 417
  - Operations, 31
  - Shipments and Supplies, 415
  - Trade, 412
  - Vessels under, 558
- **Lend Lease Act,** 10
- **Leopold,** Richard W., 880
- **Lerners,** the, Expedition of, 770
- **Leslie** William, 447
- **Lester,** Sean, 138
- **Leukemia,** 776
  - Treatment of, 828, 833
- **Leuterio,** Raul, 119
- **Lewis,** John L., 8
- **Liability Insurance,** Miscellaneous, 449, 450
- **Liberal Arts Colleges for Negroes,** 1043
- **Liberty Ships,** 557, 558, 560, 562
- **Liberty Type Collier,** 746
- **Libraries,** 1050–1058
  - in Adult Education, 1034, 1054, 1055
  - Buildings, Gifts and Grants, 1056, 1057
  - Developments, 1054
  - Fund, 1051, 1052
  - International Conferences, 1053, 1054
  - Personnel Problems, 1056
  - Post-War Planning, 1050, 1051
  - Problem of, 223
  - Training, 1055, 1056
- **Library of Congress** (*see also* Congress, Library of)
  - Map Division, 294, 295
- **Library Service to Business,** 1055
  - Expansion of, 1034
- **Libya,** 85
  - Arabs in, 131
- **Lie,** Trygve, 82
- **Life Insurance,** 439–445
  - Annuities, 441
  - Legal Reserve, 440
  - Non-forfeiture and Valuation Laws, 443, 444
  - Policies, Tax, 277, 278
  - Policy Loans, 442, 443
  - Statistics, 439, 440
- **Life Insurance Association of America,** 439, 441, 442
- **Life Insurance Company,** Income Distribution, 441
- **Ligutti,** L. G., 661
- **Lilienthal,** David E., 4
- **Linear Motor,** 733
- **Linebarger,** Paul M. A., 107
- **Linguistic Society,** 938, 944
- **Lintott,** E. Barnard, 959
- **Liquidation Advisory Committee,** 58
  - Director of, 58
- **Liquor,** Production of, 524, 525
- **Literary Criticism in Germanic Literature,** 911
- **Literature and Language,** 873–948
- **Lithium Chloride,** 794
- **Little America,** 760
- **Little Big Inch Pipe,** 324
- **Little Steel Formula,** 623
- **Livestock Pests,** 487
- **Living,** Cost of, 453
- **Lobectomy,** 835
- **Locomotive Boilers,** 721
- **Locomotive Development Committee,** 722
- **Locomotive Engineers,** Brotherhood of, 626
- **Loeb Classical Library,** 927
- **London,** 77
  - Conference at, 11
  - Foreign Ministers Council, 89, 90

  - Franklin D. Roosevelt Statue, 965
  - General Assembly Meeting, 82
  - Palestine Conference, 5, 128
  - UN in, 136, 137
- **Long Lake Dam, 314**
- **Long Range Navigation, 748**
- **Loran,** 748, 772, 774
- **Los Angeles,** County Museum, 955, 956
  - Philharmonic, 974
- **Loucks,** Carol, 274
- **Loughlin,** Edward, 214
- **Louisiana,** Bank Taxation, 279
  - Civil Service Rules, 170
  - Geology, 303, 304
  - Tax Laws, 279
- **Lovett,** Robert Morse, 44, 45
- **Lowell,** Robert, 878
- **Lower Basin States, 193**
- **Lubrication,** 719
- **Luce,** Stephen B., 949
- **Lucey,** Robert E., 678
- **Ludington,** Flora B., 1053
- **Lumber,** Production, 530
  - Shortages, 495
  - Supply Problem, 608
- **Lunar Occultations of Stars,** 703, 704
- **Lutes,** LeRoy, 343
- **Luther,** Martin, 911
- **Lutheran World Federation,** 671
- **Lutherans,** 671, 672
- **Luxembourg,** Attack Planned, 105
- **Luzon,** 117
- **Lycoming Engine, 344**
- **Lygus,** 805, 806, 808
- **Lynchings,** 593, 594

- **MACARTHUR,** Douglas, 107–109, 111, 113, 115, 342, 351, 681, 715, 1043
  - Headquarters, 109
- **MacDonald,** Thomas H., 546
- **Macedonia,** 77
- **Macelwane,** James B., 752
- **Machines,** Standardization of, 720
- **Machinery,** Insurance, 451
  - Output, 530
- **MacKenzie,** Gordon N., 1009
- **Maclean,** Joseph B., 443
- **MacMillan,** Donald B., 767
- **Madison,** Wis., Political Trends in, 215
- **Madrid,** 83
- **Magazines for Parents,** 996
- **Magellan,** 241
- **Magnesium,** 722, 794
- **Magnesium Alloy Forging Production,** 720
- **Magnetic Observatories,** 759, 760
  - Records, 761
- **Maine,** Geology, 304
- **Malaria,** 788, 789, 824, 825, 841
- **Malaya,** Wartime Turbulence, 108
- **Management and Labor, Relationship of,** 1
- **Manager Plan for City Government,** 214, 215
- **Manalac,** Gabriel, 119
- **Manchuria,** Wreckage in, 115
- **Manganese,** Electrowinning of, 794
  - Trifluoride, 787
- **Mangsee Islands,** 118
- **Manhattan Project,** 346, 373, 716, 786, 787
- **Manhattan,** N. Y., Traffic Congestion, 212
- **Manila,** Seismological Station, 752
  - Shipping Strike, 117
- **Mankin,** Helen Douglas, 592
- **Mansfield Bill,** 328
- **Manufactures,** Durable, 522, 523, 524
- **Manufactures and Transportation,** 521–574
- **Manufacturing,** Conditions in, 521–531
  - Employment, 642
  - Industries, 384
  - Non-durable (*see* Non-durable Manufactures)
  - Production Workers in, 640, 641
  - Techniques, 719, 720
  - Weekly Earnings, 628
- **Mapping,** Agencies, 287
  - Arizona, 299
  - Arkansas, 299
  - Georgia, 301
  - Illinois, 302
  - Kansas, 303
  - Maryland, 304
  - Minnesota, 304
  - Missouri, 305
  - New Jersey, 306
  - North Carolina, 307
  - Pennsylvania, 308
  - Societies, 297, 298
  - South Dakota, 309
  - Vermont, 309
  - Virginia, 310
  - Washington, 310
  - Wisconsin, 310, 311
- **Maps,** Federal Surveys and, 286–298
  - for Ground Conductivity, 290
  - Information Office, 293–295
  - Intelligence and Cartography, Division of, 295
  - Library of Congress, 294, 295
  - Military Service, 290
- **Marcantonio,** Vito, Re-election of, 32, 213, 214
- **Marianas,** 85, 140
- **Marin,** Luis Muñoz, 232
- **Marine Corps,** 57
- **Marine Engineering,** Naval Architecture and, 743–748
- **Marine Gas Turbine,** 717
- **Maritime Commission,** United States, 747
  - (*see* United States Maritime Commission)
- **Maritime Countries,** 744
- **Maritime Services,** Insured Coverage, 184
- **Maritime Strike,** 210
- **Maritime Trades Department,** 632, 633
- **Market Authority,** 207
- **Marketing Research,** 187
- **Marlow,** Christopher, 900
- **Marriages,** Rate, 847, 848, 853
  - in the United States, 580, 581
- **Mar Shimun XXIII,** 683
- **Marsh,** Burton W., 333
- **Marshall,** George C., 6, 13, 35, 108
- **Marshall Islands,** 85, 140
- **Martin, Jr.,** Joseph W., 25
- **Martinsky,** Erwin, E., 743
- **Maryland,** Geology, 304
  - Medical Car Program, 842
  - Sensational Elections, 32
- **Massachusetts Institute of Technology,** 765, 777
- **Massachusetts,** Tax Laws, 279
- **Material Payment Bond,** 453
- **Maternal and Child Health Services,** 840
  - Welfare Act, 673
- **Maternal Mortality,** 851
- **Maternity and Infant Care Program,** Emergency, 605
- **Mathematical Association of America,** 695
- **Mathematics,** 695–700
  - Analysis and Functions, 695, 696
- **Mauchly,** J. W., 349
- **Maximos V,** 683
- **May Act,** 840
- **May,** Andrew J., 38
- **Maya Village,** 768
- **Mayoralty Election,** in New York City, 213, 214
- **Mayor's Committee on Unity,** 691
- **McConnell,** Francis J., 688
- **McCormack,** John W., 25
- **McDonald,** Ralph, 1013
- **McFeeley,** Bernard, 217
- **McFeeley,** Edward, 217
- **McGill,** George, 531
- **McGoldrick,** Joseph D., 208
- **McGuire,** W. C., 211
- **McKay,** Vernon, 127
- **McKeller,** Kenneth, 25, 32
- **McMahon Bill,** 1019
- **McMahon,** Brien, 4
- **McNarney,** Joseph T., 342, 351, 688
- **McNicholas,** John T., 679
- **McNickle,** D'Arcy, 597
- **McNutt,** Paul V., 117–119
- **McReynolds,** James C., 40
- **Mead Bill,** 1018
- **Mead Committee,** 38
- **Mead,** George, 37
- **Mead,** James M., 19
- **Mead-Lanham Resolutions,** 612
- **Meat,** Controls Lifted, 9
  - Demand, 461, 462
  - Exports, 462
  - Packing Unions Dispute, 624
- **Mechanical Engineering,** 714–726
  - American Standards, 726
- **Mechanical Standards Committee,** 726
- **Mediastinal Tumors,** Treatment, 835
- **Medical Care,** 841, 842
  - for Veterans, 842
- **Medical Centers,** 839
- **Medical Education,** 180, 1024–1026
  - Developments, 1026
- **Medical Licensure,** 1025

Medical Profession, State Licensing, 179, 180
Medical Rehabilitation Service for Veterans, 359
Medical Research, Committee on, 788, 822
  Fund, 445
Medical Schools, Accelerated Programs, 1024, 1025
  Education for, 1025
Medical Sciences, 822–855
Medical Services, Industrial, 842
Medicine, Ancient, 931
Medicine, Pathology, Physiology, 822–829
Medicine and Surgery, Department of, 358
Mediterranean, Eastern, Dispute over, 77
Mediterranean Theater, Casualties, 347
Meiji Constitution, 110
Melencio, José P., 119
Melodramas, 984
Melville, Herman, 909
Menhaden, 492
Mental Health, 1008, 1009
Mental Hospitals, Women's Service in, 671
Mental Hygiene Clinics, 358
Mental Processes, 862
Merchant Marine, 771
Merchandise Entries, 539, 540
Merchandise Trade, Balance of, 424, 425
  Economic Classes, 416
Merchant Marine, 556–563
Merchant Marine Act, 1936, 560, 563
Merchant Marine and Fisheries Committee, 562
Merchant Vessels, World Fleet, 557
Mercury Switch, 729
Mercu-Trol, 729
Merriman Dam, 327
Mesons, 783, 784
Messersmith, George, 126
Metabolism, 776, 815
Metal Cutting Industry, 719
Metallurgy, Powder, 720
Metals, Electrowinning of, 794
  Engineering, 720, 721
Metals Reserve Corporation, 508, 509
Metals Reserve, Office of, 508, 509, 511
Metaphysics, 866, 867
Metazoa, Evolution of the, 800
Meteorology and Climatology, 763–766
  Industrial, 766
  Instruments, 764
  Publications, 766
  Theoretical Research, 764, 765
  Training, 765
Methodist Church, 664
Methodists, 672, 673
Methodology Controversy, 942, 943, 944
Methyl Bromide Fumigation, 486
Methyl-Methacrylate, 723
Metro-Goldwyn-Mayer, 988
Metropolitan Life Insurance Company, 837
Metropolitan Museum of New York, 953, 956, 957
Metropolitan Opera, 967, 968
Metropolitan, Syrian, 682
Mexican Expeditions, 768
  Silver, 502
Mexican War, Compensation for Veterans, 362
Mexican Water Treaty, 711
Mexico, 85
  Books on, 893
  Highways, 549
  Loans to, 124
Mexico City, 123
  Wallace in, 20
Meyer, Eugene, 88
Meyers, Adolf, 717
Mica, 730
Michelangelo, Buonarroti, 918
Michelfelder, Sylvester C., 671
Michigan, Civil Service Law, 170
  Geology, 304
  Highway Studies, 334
Mickiewicz, Adam, 941
Micro-Seismic-Meteorological Project, 752
Microwave Equipment, 739
Middle East, Air Developments, 131
  International Rivalries, 127
  Oil in, 131
  United States and the, 127–131
Middle English, 899
Middle West, Books on, 892
Migration, Population and, 575–600
  Negro, 589, 590
Mihailovich, Draja, 16
Mikolajczyk, Stanislav, 100
Military Affairs Committee, 1004
Military, Biographies, 886, 887
  Bonus, 256
  Collaboration, Bill for, 28
  Educational Programs, 1010
  History, 884
  Occupation Developments, 351
  Police Command, 117
Military Radio Equipment, 736, 737
  Service, 1011, 1012
Military Staff Committee of UN, 80
Military Training, Bill for, 355, 1003, 1004
Milk, Consumption, 464, 484
  Output, 481
  Sanitation, 842, 843
Millikan, R. A., 761
Mills, Mark Carter, 270
Milton, John, 903, 904
Milwaukee Gas Strike, 325, 326
Mind, the, 856
Mine Workers Agreement, 625
Mineral, Deposits, 57
  Industries, 500–520
  New, 756
  Nutrition, 812, 813
  Wealth, 291
Mineralogy and Petrography, 754–756
Minerals, Alaskan, 227
  Clay, 755, 756
Mines, Bureau of, 513, 716, 725
Mining Employment, 642, 643
  Industries, 384
  Output, 527
Ministry, Recruiting for the, 1030, 1031
Minneapolis, Institute of Art, 956
  Symphony, 974
Minnesota, Geology, 304
  Republican Convention, 24
Minorities, Discrimination against, 662
  Segregation of, 673
Minority Groups, Veterans in, 591, 594
Minors, Accidents to, 650
  Problems of, 649, 650
Missiles, Guided, 372, 373
Mississippi, Child Welfare Programs, 603
  Civil Service Commission, 170
  Geology, 304, 305
  Power and Light Co., 728
  Senatorial Campaign, 592
  Shipping Company, 746, 748
  Tax Laws, 279
Mississippi River Commission, 290, 295, 296
  System, 377, 378
Missouri Corporation Tax Laws, 279
  Geology, 305
  Merit System, 170
Missouri River Basin, 312, 313, 315, 711
Missouri Valley Authority, 322
Mitchell, Harry B., 167
Mitchell, William D., 616
Mitscher, Marc A., 342
Mitsubishi, 114
Mitsui, 114
Mitty, John J., 678
Model Traffic Ordinance, 338
Modernism in Art, 959
Mohawk College, 18
Molecular Beams, 778
  Spectroscopy, 777, 778
Molecule, The, 777, 778
Molotov, Vyacheslav, 102
  Atomic Control Program Rejected, 14
  Peace Proposal of, 89–92
Molybdenum, 722, 794
Monel, 722
Money Markets, Interest Rate, 399, 400, 402
  Security and, 394–400
Money and Securities Broad Form Policy, 451
Monroe, Ga., Negro Lynching, 593, 594
Monroney, A. S., 29
Montana, Geology, 305
Montclair Museum, 956
Montgomery, Richard, 353
Montmorillonite Group, 755, 756
Montreal, ILO Meeting in, 639
  PICAO Conference, 88
Montreux Convention, 101, 130
Moon, Contact with, 702, 704
Mooney, Edward, 680
Moore, Ernest Richard, 914
Moore, John, 768

Moore Plan, 259, 264, 275
Morgan, Sidney, 531
Morlock, W. J., 740
Mormon Crickets, 488
Morphology, 800, 801
  Plant, 811, 812
Morris, Newbold, 213
Morrison, De Lesseps S., 217
Morrison - Grady Provisional Autonomy Plan, 128
Mortenson, William H., 216
Morton, William Thomas Green, 845
Moscow, 75–77, 89, 90, 98, 99, 101, 106, 127
  Agreement, 15
  Conference, 11, 13, 736
  Foreign Ministers Meeting, 90, 98, 108
  Iranian Oil Agreement, 129, 130
  Peace Treaty Meeting, 103
  Theatre, 939
Moses, Robert, 206, 208, 209, 211
Mosquito Control, 805, 807
  Repellents, 792
Motion Pictures, 985–990
  Artistic Quality, 986
  Boom Profits, 988
  for Education, 1040
  Industry Selling Methods, 988, 989
  Production Cost and Increase, 985, 986, 988
  Sound, 742, 743
Motor Bus Industry, 550, 551
  Costs, 550
  Post-War Factors, 550
Motor Coach Design, 555
Motor Driving Training, 1008
Motor Fuel, Cost, 519
  Production, 518
  Taxes, 262, 282, 283, 519
Motor Vehicle, Fleet Supervisors, 339
  Licenses, 283, 284
  Registration, 549
Mott, John R., 655
Mouth Hygiene, 844
Mount Clemens Pottery Co., 52–54, 529, 637
Mount Wilson Observatory, 703
Movies, The (*see* Motion Pictures)
Moyer, Ralph A., 335
MRC (*see* Metals Reserve Corporation)
Muench, Aloisius S., 681
Munich Pact, 105
Municipal, Administration, Personnel, 218, 219
  Airports, 221
  Bond Issues, 269
  Education, 223
  Expenditures, 264–266
Municipal Finance, 207, 218–220, 264–270
  Functions, 218–224
  Indebtedness, 267, 268
Municipal Bankruptcy Act, 270
Municipal Government, 206–224
  Council-Manager Plan, 214, 215, 223
  Health Safeguards, 222
  Housing and Planning, 220
Municipal Political Trends, 214–218
Municipal Revenues and the Reduction of Real Estate Taxes, Commission on, 275
Municipalities, Income Tax Field, 278
  Manager Plan in, 214, 215
Munitions, 350, 351
Murphy, Frank, 42, 43, 48, 50, 51, 53, 616
Murphy, George M., 776
Murray, John Gregory, 678
Murray, Philip, 210
Muscle Spasm, Curare in, 828, 829
Museum Art Acquisitions, 955, 956
Museums, Educational Courses in, 1034
Music, Awards in, 977
  Festivals, 971, 972
  and the Opera, 966–977
  Post-War Activities, 966, 967
Music Teachers National Association, 967
Musical Arts, Institute of, 967
Musical Shows, 979, 982, 983
Musicians, Biographies of, 889, 890
Mustard Gas, Chemistry of, 790, 791
Mutations, Conference on, 801, 802
MVA (*see* Missouri Valley Authority)

NADLER, Marcus, 408
Nagasaki, Atom Bomb on, 827
Napalm, 355
Naphthoquinone Derivatives, 789
Narratives, Informal, 888, 889
Nathan, George Jean, 896
National Academy for Adult Jewish Studies, 689
National Academy of Sciences, 161
National Action Conference, 594
National Advisory Health Council, 840
National Airport Plan, 571
National Archives, 161, 297
National Association of Attorneys, 185
National Association of Broadcasters, 737
National Association of Insurance Commissioners, 449
National Association of Railroad and Utilities Commissioners, 321
National Association of Secondary School Principals, 1003, 1004
National Association of State Directors of Veterans Affairs, 174
National Association of State Insurance Commissions, 187, 188
National Association of Tax Administrators, 275
National Banks, Tax on, 261
National Better Business Bureau, 1008
National Bituminous Wage Conference, 625, 841
National Board of Fire Underwriters, 445
National Board of Medical Examiners, 1025
National Board of Review of Motion Pictures, 986
National Bureau of Standards, 726
National Capital Park and Planning Commission, 161, 245
National Catholic Community Service, 678
National Catholic Educational Association, 679
National Catholic Welfare Conference, 595, 677–679, 689
  Board Members, 678, 679
  Youth Department, 681
  Social Action Department, 679, 680
National Child Labor Committee, 649, 652, 1009
National Christian Councils, 669
National Citizens' Poiltical Action Committee, 32
National Commission on Children in Wartime, 649
National Commission on Higher Education, 691
National Committee on School Health Policies, 840
National Committee for Traffic Safety, 337
National Conference on the Education of Veterans in Colleges and Universities, 1019
National Conference on Street and Highway Safety, 336, 338
National Council of Catholic Men, 680
National Council of Catholic Women, 680
National Council on Compensation Insurance, 449
National Council Meeting of School Officers, 1003
National Council for Social Studies, 1007
National Defense, 6, 7, 167, 357
National Education Association, 994, 1002, 1004, 1021
  Research Division, 1009, 1012
National Emergency Council on Minority Veterans Affairs, 594
National Emergency Conference on Teacher Preparation and Supply, 1002
National Family Week, 689
National Famine Emergency Council, 460
National Farmers' Union, 36, 630, 842
National Federation of American Shipping, 561
National Federation of Rural Letter Carriers, 632

- **National Federation of Telephone Workers,** 326, 632
- **National Finance and the Public Debt,** 249–255
- **National Flood Control,** 378
- **National Forests,** 497, 548, 549
  - Administrative Maps, 291
- **National Gallery of Art,** 161, 952–955, 962
- **National Government,** 155–172 (*see also* Government; United States Government)
- **National Grange,** 36
- **National Guard,** 351
- **National Health Bill,** 40
- **National Health Council,** 840
- **National Home for Jewish People,** 685
- **National Housing Act,** 608, 611, 612
- **National Housing Agency,** 8, 32, 160, 168, 497, 508, 606, 607, 842
  - Authority, 246, 297
- **National Industrial Recovery Act,** 268, 269
- **National Institute of Mental Health,** 602
- **National Interstate Highway System,** 547, 548
- **National and Interstate Relations of the States,** 182–194
- **National Labor Relations Act,** 23, 634
- **National Labor Relations Board,** 58, 161, 168, 634, 637, 639
  - Law, 33, 34
- **National League of Nursing Education,** 1026, 1027
- **National Mediation Board,** 161, 626, 634, 639
- **National Mental Health Act,** 222, 839, 840
- **National Negro Congress,** 593
- **National Office of Vital Statistics,** 577, 580, 852, 853
- **National Opinion Research Center,** 588
- **National Organization for Decent Literature,** 680
- **National Park Service,** 297
- **National Parks Association,** 1034
- **National Personalities,** 11–24
- **National Refugee Service,** 686
- **National Relations Program,** 1051
- **National Research Council,** 779, 822, 830
  - Foundation, 1019
- **National Safety Council,** 337, 338
- **National School Lunch Act,** 186, 467, 679, 840
- **National Science Foundation,** 839
- **National Service Life Insurance,** 357, 360, 439, 441
- **National Service Life Insurance Act, 1940,** 360
- **National - State Cooperation,** Channels of, 191, 192
- **National Symphony,** 975
- **National University Extension Association,** 1036
- **National Urban League,** 591, 1049
- **National Wage Stabilization Board,** 7, 9, 624, 625, 631, 637, 638
- **National War College,** 348
- **National War Labor Board,** 638
- **National Youth Administration,** 1009
- **Nationality Act, Amendment to,** 589
- **Naturalization Act,** 47
- **Naturalization Laws,** 46, 47
  - Racial Restrictions Removed, 589
- **Navajo Reservation,** 598
- **Naval Architecture and Marine Engineering,** 743–748
- **Naval Central Procurement Fund,** 28
- **Naval Construction and Equipment,** 364–373
- **Naval History,** 884
- **Naval Observatory,** 57
- **Naval Operations,** Pattern of, 364
- **Naval Research,** Office of, 293, 373, 715, 771
- **Naval Reserve Program,** 1022
- **Navy,** Department of the, 35, 57, 59, 60, 62, 158, 349, 746
- **Navy,** United States, 28, 368, 369
  - Bases, 368, 369
  - Budget of, 28
  - Correctional Programs, 614, 615
  - Marine Corps and Coast Guard Personnel, 28
  - Post-War Program, 368, 369
  - Scientific Research, 709
  - Size and Strength of, 28
  - (*see also* United States Navy)
- **Nazis,** Criminal Acts of, 104, 105
  - Holland's Art Looted by, 954
  - Penal System, 617
  - Leaders, Trial of, 103, 104
  - U-Boat Fleet, 366
- **Nazism,** 97
- **NBC Symphony,** 972
- **NCCS** (*see* National Catholic Community Service)
- **NCWC** (*see* National Catholic Welfare Conference)
- **NEA** (*see* National Education Association)
- **Neal,** Clarence, 214
- **Near East,** Books on, 894
  - Program for, 3, 4
- **Nebraska,** Civil Service Commission, 170
  - Geology, 305, 306
- **Necrology for 1946,** 1062–1074
- **Neely,** William E., 241
- **Nefertiti,** Queen, 952
- **Negro,** in Armed Forces, 592, 593
  - Disfranchisement of the, 198
  - Health Education Program, 1049
  - Housing and Migration of the, 589, 590
  - Illiteracy among the, 1047, 1048
  - Methodism, 673
  - in Politics, 592
  - Population in District of Columbia, 244
  - Reconversion and Employment of the, 590–592
  - School Populations, 1041
  - Segregation of the, 52, 673
  - Students, Conflict with Whites, 1007
  - UN Petition, 593
  - Veterans, 589, 590, 594
  - Voting of the, 32
- **Negro Education,** 592, 1041–1050
  - Adult, 1047, 1048
  - Colleges, 1016, 1042–1044, 1047
  - Elementary Schools, 1041
  - Extension, 1049, 1050
  - Graduate, 1045, 1046
  - High Schools, 1041, 1042
  - Professional, 1044, 1045
  - Rural, 1048, 1049
  - for Teachers, 1046
  - Veteran, 1047
  - Vocational, 1049
- **Nemiah,** Royal Case, 925
- **Net Income,** 435, 436
- **Netherlands,** The, 86, 90
  - Art from, 954
  - Balkan Crisis, 77
  - on Franco Regime, 79
  - Loan to, 107
  - Seizure Planned, 105
- **Neumann,** Emanuel, 684
- **Neumann,** Frank, 751
- **Neuropsychiatric Service,** 358, 359
- **Neurosurgery,** 831
- **Neurotropic Virus Diseases,** 345
- **Neutrinos,** 783
- **Neutrons,** 781, 782
  - Beams, 782
  - Irradiation, 777
- **Nevada,** Geology, 307
- **Nevantergan,** 826
- **Newark Art Museum,** 962
- **New Britain Art Institute,** 956
- **New England Fisheries,** 493
- **New Hampshire,** Geology, 306
- **New Jersey,** Bank Taxes, 279, 280
  - Geology, 306
  - Public Health Laws, 329
  - Strikes, 210, 325, 326
  - Veteran Preference Law, 170
  - Welfare Programs, 603
- **New Mexico,** Geology, 306
- **New Orleans,** Commission—Council Government, 217
  - Government Research Bureau, 217
  - Opera, 970
  - Symphony, 976
- ***New Republic,*** Henry Wallace, Editor, 21
- **New Testament,** 927
- **Newton,** Louie D., 659, 661
- **New York City Affairs,** 206–214
  - Administration, 206
  - Charter, 209
  - Financial Problem, 206, 207
  - Housing, 212, 213
  - Labor Relations Bureau, 171
  - Mayoralty Election, 213, 214
  - Planning and Zoning, 211, 212
  - Port Losses, 210

  Post-War Rehabilitation, 208
  Sales Tax, 207
  UN Headquarters, 82, 84, 136, 137
New York City, Center Opera, 969, 970
  Film Critics, 986
  Philharmonic Symphony Orchestra, 971, 972, 977
New York Office of U. S. Tariff Commission, 535
New York State, Anti-Klan Law, 690
  Bank Tax Laws, 280
  Corporation Tax Laws, 278
  Geology, 306, 307
  Public Health Program, 602, 603
  Veteran Preference Act, 170
  Welfare Legislation, 602, 603
New York Stock Exchange, 394–398
  Corporate Dividends, 389, 390
  Curb Market, 386, 394, 395, 398
  Loan Renewals, 402
  Trends, 394, 395
  Stocks, Value, 397, 398
  Volume, 386
New Zealand, 85, 86, 90
  Trust Territories, 85
NHA (*see* National Housing Agency)
Nicaragua, Agricultural Bank, 124
  Expedition to, 768
  Naval Base Returned to, 122
Nicholai, Bishop, 682
Nickel Alloys, 722
Nickel-Copper Ore, 503
Nicodim, Patriarch, 683
Niebuhr, Reinhold, 655
Niedermayer, John C., 364, 556
Niemoeller, Martin, in the United States, 656
Nimitz, Chester W., 28, 368, 369
Nineteenth Century, French Literature, 917, 918
  Germanic Literature of the, 912, 913
  Poets, 907
  Prose Writers, 906, 907
Nisei in War Effort, 588
Nitrogen, Atom, 778
  Compounds, 793
  Fertilizers, 349
  Mustards, 791, 826, 827, 833, 834
Nobel Prize in Physics, 786
Nokrashy Pasha, 129
Non-Agricultural Employment, 641
Non-Durable Manufactures, 523, 524, 640
Non-Ferrous Metals, 506–511
  Industrial Strikes, 506, 507
  Volume of, 529
Nordic Culture, 864
Norstad, Lauris, 343
North Africa, French and Spanish Possessions, 128
North American Regional Broadcasting Conference, 736
North Carolina, Geology, 307
North Dakota, Geology, 307
North Magnetic Pole, 760
Northern Baptists, 665, 666
Northern Hemisphere, Map of, 290
Northern Ireland, Diesel Powered Vessels for, 745
Norton, Clark F., 11
Norway, 90
Norwegian Lutheran Church, 671
Notestein, Wallace, 880
Novels, 874, 875
N.S.L.I. (*see* National Service Life Insurance)
Nuclear, Disintegration, 783
  Energy, 715, 780
  Induction, 778
  Physics, 780
Number Theory, 698
Nuremberg, 40
  International Military Tribunal, 103–106
  Nazi War Leaders Condemned, 22
  Tribunal, Precedents Set, 104, 105
Nurses, Army, 346
Nursing, Agencies, National, 840, 841
  Organized, 1026, 1027
  Schools, Trends, 1026
Nursing Education, 1026, 1027
  Personnel, 1026
NWSB (*see* National Wage Stabilization Board)
Nylon, 723, 788

OATS, 477, 816
Oak Ridge Atomic Energy Plant, 322, 346, 373
O'Brien, William D., 678
Observatories, Astronomical, 700–706
O'Callaghan, Joseph T., 681
Oceanography, 293, 771–774
Oceano-Institutions, 773, 774
Occupied Areas, Trading with, 428, 429
Occupied Japan, 107–115
ODT (*see* Defense Transportation, Office of)
O'Dwyer, William J., 206–214
O'Hara, John F., 681
Ohio, Geology, 307
  District Land Office, 319
  General Code, 171
  Old Age Legislation, 603
  State Republican Convention, 23
Ohio River Basin Compact, 193
Oil, in California, 26
  Field Equipment, 515
  Operations, 518
  Interstate Compact, 193
  in Iran, 74, 75, 129, 130
  in Middle East, 127, 131
  (*see also* Petroleum)
  Refineries, U. S., 517, 518
  Reservoirs, 514, 515
  Shortage of, 463
  Supply and Demand, 515
  Tidelands, 2, 34, 35
  Wells, U. S., 516
  Workers International, 624
Oilseeds, 479
Oil Shale, 513
O'Keefe, Georgia, 959
Oklahoma, Geology, 307, 308
Old Age Assistance, 187, 604
  Pensions, 198
Old English, 898, 899
Old Masters Exhibits, 957, 958
Old Persian, 944
Old Vic Company, 978, 979
Oldham, G. Aston, 655
Olefin Styrene, 791
Olivier, Laurence, 985
Olmsted, H. M., 320
OMR (*see* Metals Reserve, Office of)
O'Neill, Eugene, 978
One-Man Art Shows, 958, 959
One-Man Sculpture Shows, 962
OPA (*see* Price Administration, Office of)
Opera, at the Metropolitan, 967, 968
  Music and the, 966–977
  Scandinavian Influence, 967, 968
  Touring Companies, 970
"Operation Anopheles," 344
"Operation Barbarossa," 105
Operation Crossroads, 346
"Operation Green," 105
"Operation White," 105
Operettes, 983, 984
Oral Conditions, Vitamin B and C in, 844
Orange Free State, Goldfield, 500
Oregon, Geology, 308
  Retirement System, 171
Orekhov, Fedor, 130
Organic Act of Puerto Rico, 232, 235
Organic Chemicals, Synthetic, 534, 535
Organic and Inorganic Chemistry, 786–793
Organic Compounds, Classification of, 793
Organic Evolution and Genetics, 797–804
  Publications on, 803, 804
Organization Dealing with Health of Jews, 687
Organization for Rehabilitation through Training, 687
Organized Reserve Corps, 351
Organo-Silicon Compounds, 792
Orgonosols, 723
Orient, Trade with, 535
Oriental Fruit Moth, 487
Oriental Institutes, 950
Oriental Research, 950
Orlov, Mikhail A., 661
Ormandy, Eugene, 973
Orsborn, Albert, 675
ORT (*see* Organization for Rehabilitation through Training)
Ortega, Francisco, 119
Orthodox Churches, Abroad, 683
  in America, 682, 683
OSE (*see* Organization Dealing with Health of Jews)
Osgood-Carathéodory Theorem, 700
Osgood, Thomas H., 780
Osmena, Sergio, 116, 117
Osmosis, 814

Osmotic Pressure, 779
Outer Mongolia, 80
Overseas Relief, Committee for, 672, 686
OWI (*see* War Information, Office of)
OWMR (*see* War Mobilization and Reconversion, Office of)
Oxnam, G. Bromley, 655, 673

PACIFIC Area, Books on, 894, 895
Pacific Bases, United States, 6
Pacific Coast Fisheries, 493
  Hydrographic Surveys, 771, 772
Pacific Gas and Electric Co., 727
Pacific Islands, 85
  Anthropological Studies of, 868, 869
Pacific Ocean, Seismic Seawave, 753
  Trade Route, 562, 563
Pacific Theater, Casualties, 347
Painting, 952–961
  Six Centuries of, 962
Palestine, 13, 685
Palestine, Cabinet Committee on, 60, 61
  Immigration, 19
  Jewish Products, Boycott of, 128
  Partition of, 128
  Problem, 127, 128, 673, 684, 685
  Taft's Views on, 22
  United States Policy on, 5
Palladium, 503
Pallister, John C., 769
Paludrine, 825
Pamaquine, 824
Panama, Banana Plantations, 124
  Bases Returned to, 123
  Governor of, 161
Panama Canal, 122, 351, 352
  Protection, 123
Pan-American Highway, 549, 550
Pan-American Sanitary Bureau, 161
Pan-American Union, 122, 161
Paper Industries, 526
Papyri, 931
Paricutin Volcano, 752, 758
Paris, American Library, 1053
  Peace Conference, 12, 13, 16, 20, 87, 662
  Treaties, 89–94, 97, 98
  UNESCO Meeting, 87
Parish Schools, 676
Parking, City, 340
Passenger Liners, American, 560, 561
Pasture Research, 816, 817
Pathology, 822–829
Patman Bill, 32
Patriarch of Constantinople, 681
Patterson, Robert P., 27, 342, 345, 348, 355
Paul, Willard S., 343
Pauley, Edwin W., 2, 25, 26
Pay Legislation, 168, 169
Paymaster Broad Form Policy, 451
Payments in Lieu of Taxes, Committee on, 275
Payne Field, 131
Peace Conference, 12, 16, 89
  Problems of, 865
  Settlements with Axis Satellite States, 89
  Treaties and the U. S., 89–98
Peacetime, Compulsory Conscription in, 665
  Reconversion in, 342, 622
Pearl Harbor, 114, 180, 227, 352, 521, 522, 562, 563, 935
  Attack, 41, 106
  Inquiry into, 32, 35
Pelley, John J., 546
Penal Affairs, International, 617
  State Developments, 615, 616
Pendatun, Salipada, 119
Penicillin, 789, 822, 830–832, 835, 840
  Synthesis, 789
Pennsylvania, Academy of Fine Arts, 956, 960, 964
  Geology, 308
  Military Service, 171
Pentaquine, 824
Peptic Ulcer, Treatment of, 835, 836
Perception, 862
Perfluoroadipic Acid, 788
Perfluorobutadiene, 788
Performance Bond and Labor, 453
Peritonitis, 831
Permanent Court of International Justice, 88
Pernicious Anemia, 825, 826
Péron, Juan D., 125, 126
  Government, 125
  Press, 126
Persian Gulf Command, 74
Personal Income Taxes, 261, 262, 273, 274
Personality, 856, 857
  Tests, 857
  Types, 857
Peru, 122
  Credit for, 124
  Expeditions to, 768, 769
Pests, Household, 805
Petersen, Howard C., 342
Peterson, Kenneth M., 1001
Petrillo Bill, 33, 634
Petrography, Mineralogy and, 754–756
Petroleum, 318, 512–520
  Administration for War, 60
  Chilean Exploration, 124
  Gas, Liquefied, 716
  (*see also* Gasoline)
  Lubricants, 719
  Peacetime Role, 512
  Production, 512–514, 526
  Reciprocal Trade Treaties, 526
  Research, 513, 514
  United States Reserves, 512, 513, 515
  Wage-rate Increase in Industry, 623, 624
Phasitron, 738
Phelps-Stokes Fund, 1050
Phenols, 789
Philadelphia Orchestra, 973
Philadelphia, Reservoir Facilities, 328
Philharmonic Symphony Orchestra, 971, 972
Philippines, Republic of the, 26, 115–121, 673
  Agricultural and Industrial Bank, 120
  Air Pact, 118
  Alien Property Custodian, 61, 62
  American Loan to, 118
  Civilians Evacuated from, 602
  Diplomatic and Consular Establishment, 61
  Elections, 117
  Food Problem, 21
  Foreign Affairs, 118, 119
  GI Bill of Rights, 120
  Governmental Organization, 119
  Independence of, 31, 61, 115
  Industrial Reconstruction, 119, 120
  Insurrection, 362
  Japanese Occupation, 120
  Labor Difficulties, 117
  Military Assistance Act, 118
  Military and Naval Bases for U. S., 119
  Reconstruction and Rehabilitation, 2, 116
  Rehabilitation Finance Corporation, 120
  Relief and Rehabilitation Administration, 116
  Republic Act No. 1, 118
  Resources and Public Utilities, 120, 121
  Trade Act, 117, 118, 120, 121, 532, 534
  Unemployment Problem, 121
  UN Representation, 116, 119
  United States Relations, 116, 118, 119
  War Profits Tax Bill, 120
  Wartime Turbulence, 108
Philosophy, 863–868
  Cultural Synthesis, 863–865
  Greek, 928, 929
  in Latin Literature, 922, 923
Phosphorus, 776
  Radioactive, 828
Photosynthesis, 776, 813, 815
Physical Anthropology, 869
Physical Chemistry, 776–779
Physicians, Negro, 1045
Physics, 780–786
  Chemistry and, 776–796
Physiological Psychology, 859, 860
Physiology, 822–829
  Plant, 812
PICAO (*see* Provisional International Civil Aviation Organization)
Pig Iron (*see* Iron)
  Production, 505, 528, 529
Pigments, 813
Pike, Sumner T., 4
Pilchards, 492
Pinchot, Gifford, 498

Pinckney, Josephine, 873
Pineapple Companies in Hawaii, 230
Pinero, Jesus T., 232, 233
Pink Bollworm, 489
Pipe Flow, 331, 332
Pitts, Samuel W., 531
Pittsburgh Electric Utility Strike, 325, 326
Pittsburgh Symphony, 975, 976
Pius XII, Pope, 667, 680
Plant and Animal Stocks, Committee on, 801
Plant, Disease of, 807, 808, 817
  Evolution, 810
  Fumigation, 486
  Growth, 813, 814
  Patents, 820
  Parasites, 490
  Pathogens, Physiologic Specialization, 819, 820
  Quarantines, Insect Pests and, 485–491, 809
  Radiation Effect on, 814
Plant Industry, Bureau of, 296
Plant Patent Act, 820
Plastics, 722, 723–795
Plastisols, 723
Platinum, 500–503
  Price, 503
  World Production, 503
Plenipotentiary Conference, 736
Plexene M., 723
Pleydell, Emile, 206
Plutonium Project, 787
Plywood Shortages, 495
Pneumonectomy, 835
Poetry, 876–880
  History and Development of, 895, 896
Poets, 878–880
Poison Gas, Research on, 833, 834
Poland, 90, 103
  Armed Invasion of, 104, 105
  Elections in, 99, 100
  Franco Regime Threat to, 79
  Loan to, 107
  Plight of, 21
Polar Navigation, 294
  Regions, 760
Policarp, Bishop, 683
Police Department, 206, 213
Poliomyelitis, 331, 837
Polish Folklore, 941
  Literature, 941
  Poetry, 941
  State Railways, 107
  Studies, 940, 941
Political History, 881, 882
Political Science Courses, 1028
Politics, in Latin Literature, 923, 924
  Negro in, 592
Poll of Educational Experts, 1003
Polyethylene, 723
Polyfluorethylene, 723
Polymer Research, 779
Polymeric Systems, 724
Polymerization, 788
Polymorphism, 803
Polynesian, 243
Polyploidy, 800
Polystyrene, 723
Pond, Chester B., 278
Population and Migration, 575–600
  Birth and Death Rates, 577, 578
  Emigrant Aliens, 575, 576
  Employment Status, 581, 582
  Family Statistics, 585–587
  Genetics of, 797–799
  Growth, 575–577
  Immigrant Aliens, 575, 576
  by States, 578–580
  Statistics, 575–587
Populist Party of Greece, 101
Port Authority, 212
Portal-to-Portal Decision, 41, 52–54, 529
Porter, Paul A., 26, 734
Portrait Paintings, 959
Ports, Commerce of, 376
Portugal, 80
Portuguese, Bibliography, 915
  Language, 916
  Literature, 919
Postal Censorship, 41, 46
Postal Pay Bill, 168, 169
Post-Office Department, 26, 158
Post-War, Cotton Program, 533
  Dentistry, 843
  Education, 1013, 1014, 1020, 1043
  Foreign Trade, 532
  Libraries, 1050, 1051
  Reserve Fund, 261
  State Taxation and Finance, 190
Post-War Economic Policy and Planning, Committee on, 35
Potato, 818
  Pest, 805
Potholes Dam, 314, 711, 712
Potsdam, Conference at, 11, 89, 99, 101, 103, 130, 459, 655
Potter, Warren H., 966
Pottery in Bible Times, 932
Poultry Industry, 463, 464
Power Plants, 312, 313
  Production, 320, 527
Pownall, Charles A., 242
PRA (*see* Public Roads Administration)
Practising Law Institute, 1024
Preachers, Biographies of, 887, 888
Prehistoric Research, 950
Presbyterian Church of the U. S. A., 663, 674, 675
  against Conscription, 665
Presbyterian Restoration Fund, 674
President, the and His Policies, 1–10
  Office of the, 155
  Program of, 1
  (*see also* Truman, Harry S.)
Presidential Vacancy, 155
Presidents, Biographies of the, 885, 886
Press, Freedom of, 47, 48
Prevention and Control of Juvenile Delinquency, Conference for the, 616
Pribilof Islands, 226, 227
Price Administration, Office of, 8, 9, 35–37, 62, 462
  Handicaps of, 327
  Non-Ferrous Metals and, 506, 507
  Regulations, 51, 52, 61
  Tin Restrictions, 511
Price Ceilings, 36, 37, 218, 466, 502, 510, 740
Price Control, 35–37
  Crisis, 465, 466
  Lapse of, 621
  Legislation, 465, 466
  Removal of, 630, 631
Price Control Act, 2, 9, 15, 25, 34, 466, 602, 629
Price Decontrol Action, 466
Priest Bill, 839
Prince, David C., 727
Princeton University, Activities of, 139
Prisons and Crime Control, 614–617
  Population, 614
Probate Code, Model, 407
Problems of War and Peace Conference, 123
Production, 2
Production and Marketing Administration, 467
Professional Standards for Teacher-Preparing Institutions, Commission for, 1002
Professions, Education for the, 1021–1032
Profits Taxes, Federal Income and, 270–274
Property Taxes, Land and, 274–278
Proskauer, Joseph M., 684
Prospect Mountain Tunnel, 315
Prosthetic Service, 359
Protein Investigations, 779
Protestant Denominational Activities, 663–676
Protestant Episcopal Church, 663, 664, 669, 670
Protocols of Zion, 587
Proton, 781, 782
Provisional International Civil Aviation Organization, 86, 88
Pryor, Thomas M., 985
Psychological Tests in Industry, 859
Psychology, 856–863
  Conditioned Response, 860, 861
  Post-War Training, 856
  Textbooks on, 856
Public Accountants, Certified, 433
Public Accounting, 431–439
Public Administration Clearing House, 1027
Public Administration, Education for, 1027, 1028
  Curriculum, 1027, 1028
Public Assistance, 603, 604
Public Debt, National Finance and, 249–255, 401
Public Education, International Conference, 1013
Public Finance and Taxation, 249–285
Public Health, 222, 836–843
  Federal Legislation for, 839 840

  Laws, 329
  State Needs, 840
  Professional Training, 838, 839
  Service, 577, 580
  Nursing, Organization for, 1026
Public Lands, 316–320
  Reconversion, 316
Public Life, Men in, 886
Public Officials Policy, 451
Public Resources and Utilities, 286–341
Public Roads Administration, 296, 547–549, 710
Public Schools, Adult Education Programs in, 1035
Public Social Work and Welfare, 601–606
Public Utilities, 320–326, 396
  Commission, 195
  Expansion, 326
Public Utility Holding Act, 54, 330
Public War Housing Program, 613
Public Welfare Agencies, 222
  Board of, 245, 247
  Local, 603
  State, 177, 178
Public Works, 188
  Administration, 269
  Construction, 220, 221
Puerto Rican Reconstruction Administration, 233
Puerto Rico, 231–237
  Agriculture, 235
  Crops, 234
  Development Bank, 235
  Economic Status, 233, 234
  Education in, 234
  Federal Activities, 233
  Finances, 236
  Government of, 232, 233
  Health in, 234
  History of, 232
  Industrial Development, 235
  Justice Department, 236
  Labor in, 235
  Land Program, 235, 236
  Legislation, 236
  Political Status, 233
  Public Utilities, 236
  Shipping, 233, 234
  Status of, 2
Pulaski, Edwin J., 829
Pulitzer Prize, 873
Pulmonary Diseases, 835
  Congenital Stenosis, 834, 835
Pupin, Michael, 682
Purchase of Obligations Issued or Guaranteed by the International Bank, Act for, 192
Pushkin, Alexsander Sergeevich, 938, 939
Pyle, H. G., 1032
Pyribenzamine, 826
Pyruvic Acid, 833

QUABBIN Reservoir, 328

Quakers, Colleges, 671
  Missions in European Countries, 671
  (*see* Friends, Religious Society of)
Quartermaster Corps, 349
Quartz, Crystals, 754, 755
Quill, Michael, 209
Quinacrine, 788, 824
Quinine, 789
Quinoline Compounds, 788, 789
Quirino, Elpidio, 117–119

RACE Conditions in the United States, 587–597
Race Relations, Agencies, 596
  American Council on, 594
  Church Department of, 660
  Clinic, 597
  Improvement, 1041
Race Riots, 593, 594
Racial Intolerance, 858
  Violence, 593, 594
Radar, 352, 353, 702, 748
  for Airplanes, 564, 572
  in Army, 737
  Equipment, 763, 764
Radford, Arthur W., 364, 365, 369
Radiant Heating, 725, 726
Radiation, 718
  Infrared, 702
  Laboratory, 776
  Therapy, 833
Radio, 734–740
  Network, 324
  Chemistry, 789
  Receivers, 737
  Relay System, 738
  Stations Restrictions, 33
  in Transit Industry, 554, 555
Radio Corporation of America, 733, 736, 739
Radioactive Fission Products, 787
Radioactive Iodine, 776, 777, 833, 834
  Isotopes, 776, 777, 833, 834
  Phosphorus, 828
Radioactivity, 780, 784, 822
  Chemical Effects of, 777
Radiochemistry, 776, 777
Raeder, Erich, 104, 105
Railroads, 540–546, 721, 722
  Brotherhoods, 626, 632, 842
  Commission, 195
  Committee for the Study fo Transportation, 546
  Employment on, 542, 643, 644
  Equipment, 528, 721, 722
  Income Account, 544
  Industry, 386, 387
  Labor Disputes, 626
  Legislation, 545
  Locomotives, 530
  Operating of, 541, 544
  Reconstruction, 313
  Revenue, 543
  Seizure of, 7
  Shares, 396
  Strikes, 33, 540–542, 718
  Traffic on, 528, 540, 541, 543, 544
  Transportation Workers, 627
  Wage Case, 541, 542
Railroad Reorganization Bill, 545
Railroad Retirement Act, 602, 633
  Board, 161, 644
Railroad Social Insurance Bill, 545
Railway Express Agency, 543
Railway Labor Act, 626, 634
Railway (*see* Railroad)
Rams Horn Tunnel, 315
Rand, E. K., 925
Randall, Charles E., 495
Rank, J. Arthur, 989
Rankin, John E., 32
Rate Regulatory Bill, 446
Rathje, Frank C., 405
Ratio Detector, 738
Rawinsonde Observation, 764
Ray, Harold R., 330
Rayburn, Sam, 25
Raymond Rich Associates, 1027
Rayon, Production of, 794
Reading for Elementary Education, 997, 998
Ready, Michael J., 678, 680
Reasoning, 862
Reclamation, Bureau of, 193, 289, 311, 312, 316, 709–711, 718
Reclamation and Irrigation, 311–316
  Benefits of, 316
  Law, 316
  Projects, 311, 312
Reconstruction Finance Corporation, 26, 30, 59, 161, 269, 405, 432, 433, 510
Reconversion Problems, 622–624, 629
Recording Systems, 742
Red Army, in Iran, 74, 75
  Menace of, 93
Red Cross, American National, 161
  (*see* American Red Cross)
Reed, Stanley F., 47, 48, 51, 52
Reed, Thomas H., 215
Reemployment Problem, 622, 623
Reforestation, Water-Shed, 328
Reformed Church in America, 675
Refrigeration, 724, 725
Refugees, Assistance for, 687
Regala, Roberto, 119
Reich (*see* Germany)
  War Preparations of, 105
Reichelderfer, F. W., 763
Reiff, Henry, 137
Reindeer, Alaskan, 227
Release Procedures, Conference on, 616
Relief Control Board, 60
Relief, Private, 413, 414
Religion, Freedom of, 47, 48
  Greek, 929, 930
  in Latin Literature, 922, 923
  and Religious Activities, 654–694
Religious, Education, 858, 859, 999, 1034, 1035
  Liberty, 48
  Organizations, Religion and, 654–694
  Paintings, 959
  World, Atomic Bomb Reaction, 654

- Relocation Centers for Japanese, 588
- Rent Control, 9, 18
- Rental Housing, Financing of, 442
- Reorganization Act, 1945, 8, 29, 30, 55
- Representatives, House of, Case Bill Veto, 8
  - (*see also* House of Representatives)
  - Republicans in, 62
- Reproduction, Plant, 613, 614
- Republican Open Forums, 23, 24
- Republican Party, 22, 62, 213
  - Steering Committee, 23
  - Victory, 9
- Reserve Fleet, 745
- Reserve Officers Training Corps, 354, 1019
- Residence and Outside Theft Policy, 451
- Resins, 723
- Respiration, Plant, 813
- Retraining and Reemployment Administration, 174, 638
- Revenue Act, 1916, 531
- Revenue Act, 1945, 251, 271, 274, 278, 437
- Revenue, Sources of, 267
- Revues, 983
- Reynolds Metals Co., 507, 508
- RFC (*see* Reconstruction Finance Corporation)
- Rhode Island, Geology, 308, 309
  - Philharmonic, 976
- Rice, to the Philippines, 116
  - Production, 475
- Richmond, Va., Manager Plan, 216
- Riedel, John, 211
- Ring Equipment, 736, 737
- Ringling Museum, 956, 957
- Rio Conference, 122
- Rio Piedras, Meter at, 761
- Rittenhouse, Irma, 640
- River Authorizations, 375, 376
- River Basins, Reports on, 315
- River, Developments, 711, 712
  - Improvement of, 373, 374
- River and Harbor Act, 27, 375
- R Leonis, 702
- Road Building Program, 497, 546, 708
- Road Systems, Secondary, 548
- Robbery Insurance, 451
- Roberts, Owen J., 10, 35, 669, 953
- Robinson, Boardman, 959
- Robinson-Patman Anti-discrimination Act, 187
- Robinson, Theodore, 959
- Robot Rockets, 372
- Rocha, Antonio, 122
- Rochester Philharmonic, 975
- Rockefeller Foundation, 139, 839, 840, 936, 1051, 1052
- Rockefeller, John D., 84, 655
- Rockefeller, Laurence, 211
- Rockefeller Library, 137
- Rocket Propelled Aircraft, 564, 571
- Rockets, Use of, 702, 703
- Rodenticides, 841
- Rodriguez, Eulogio, 117
- Rodzinski, Artur, 971, 972
- Roentgen Radiation, 834
- Roman Catholic Church, 676–681
- Roman Religion, 922, 923
- Romance Languages and Literatures, 914–920
  - Bibliography, 915
- Romantic Poets, 905, 906
- Rome, Classical School at, 949, 950
  - Consistory of, 680
- Rome, Finn, 760, 767
- Romulo, Carlos P., 116, 119
- Roosevelt, Family Estate, 17
- Roosevelt, Franklin D., 40, 44, 180, 270, 498
  - Bipartisan Approach of, 136
  - Good Neighbor Policy, 122
  - Pearl Harbor Report to, 35
  - United States Employment Service, 183
- Roosevelt, Mrs. Franklin D., 17, 18, 656
  - Domestic Issues, 18
  - General Assembly Session, 17
  - Germany Visited by, 17
  - Human Rights Commission, 17
  - on Russia, 17
- Rooseveltian New Deal, 63
- Root, Elihu, 140, 141
- Rosenberg, Alexander S., 689
- Rosenberg, Alfred, 104, 105
- Ross, Charles G., 6
- ROTC (*see* Reserve Officers Training Corps)
- Rowell, Alfred L., 768
- Roxas, Manuel, 115–121
  - Inauguration of, 118
- Royall, Kenneth C., 347
- Rubber, 723, 724
  - Chemistry, 776
  - Goods, Output, 527
  - Synthetic, 723, 724
- Ruibal, Rodolphe, 768
- Rules Committee, 33
- Rum from Virgin Islands, 238, 240
- Rumania, Elections in, 99, 100
  - Peace Treaty, 13, 89, 93, 96, 97, 99
  - Reparations and Territorial Changes, 96, 97
- Rumanian Synod, 683
- Rumford Falls Light and Water Co., 729
- Rummel, Joseph F., 678
- Rural Communities, Industries for, 467, 468
- Rural Education, Negro, 1048, 1049
- Rural Electrification, 527
- Russell, Howard L., 601
- Russell, Richard B., 688
- Russia, Atomic Bomb Plan of, 14, 82
  - Bishops in, 682, 683
  - Churchmen in, 664
  - and the Dardanelles, 101, 102
  - on Displaced Persons, 83, 84
  - Foreign Ministers Meeting, 90
  - on Franco Regime, 79
  - Iranian Oil Agreement, 131
  - League of Nations, Position of, 136
  - New Testaments sent to, 661
  - Orthodox Churches of, 682, 683
  - (*see also* Soviet Union, U.S.S.R.)
  - Western Conflict, 678
- Russian, Biography, 938
  - Domination, 12
  - Criticism, 939, 940
  - Drama, 938, 939
  - Expansionism, 127
  - Fiction, 939, 940
  - Fleet, 561
  - Institute, 936
  - Language, 937, 938
  - Literature, American Influence on, 940
  - Parishes in America, 682
  - Poetry, 939
  - Studies, 935, 936
- Russo-Turkish Negotiations, 130
- Rutherford, Hugo, 770
- Rutledge, Wiley, 43, 50, 51
- Ryan, James H., 678
- Ryder, Albert Pinkham, 958, 959
- Ryder, Oscar B., 531
- Rye, 474, 475

- SAFE Harbor Water Powe Corporation Case, 321
- St. Croix, 237, 238
- St. Elizabeth's Hospital, 55, 57
- St. John, 237, 238
- St. John of Rila, 683
- St. Laurence Waterway Project, 20, 545
- St. Louis City, Art Museum, 956, 962
  - Symphony, 974
- St. Thomas, 237, 238
- Salmon, 492
- Salt Lake Aqueduct, 314
- Salvation Army, 675
- Samoa, American, 242–244
  - (*see* American Samoa)
- Samoan People, 243
- Sampson College, 18
- Sampson, Frank, 214
- San Antonio Symphony, 976
- Sanborn, Colin C., 768
- San Diego Gas and Electric Co., 727, 728
- San Francisco, Conference, 139, 844
  - Opera, 969, 970
  - Sculpture Exhibit at, 962
  - Symphony, 974
- Sang-yohokoku-kai, 114
- Sanitation, 842, 843
- San Juan, 234
- Sanskrit, 944
- Sansom, Sir George, 109
- Sather Classical Lectures, 926
- Sauckel, Fritz, 104
- Saudi-Arabia, 128, 131
  - Petroleum in, 516
- Savings Bonds, 402
- Sawtimber, 495
- Scandinavian Languages and Literatures, 914
- SCAP (*see* Supreme Commander for the Allied Powers)
- Schacht, Hjalmar, 104

Schiller, Johann Christoph Friedrich, 912
Schlich Medal, 498
Schlich, Sir William, 498
Schmidt, Karl P., 768
Schneiderman, Harry, 684
Schnitman, L. Seth, 521
Schools, Attendance, 582–585, 648, 649
  Building of, 206
  Bus Construction, 336
  Children's Problem, 649
  Financing, 994
  Health in, 840, 1007, 1008
  Housing Program, 995
  Instruction, Changes, 998
  Lunch Programs, 186, 467
  Radio in the, 1012
Schuyler, William M., 155, 165
Schwartz, Joseph, 684
Schwellenbach, Lewis B., 24, 592, 651
Scientific Research, Office of, 822
Scottareggio, Joseph, 213
Scout Dogs, 347
Scrap Metal, 507
Screwworms, 487
Scripps Institution of Oceanography, 773
Sculpture, 961–966
  Abstraction Studies, 964
  Contemporary, 962
  Exhibits, 962
  Future of, 965, 966
  Six Centuries of, 962
  Students Work, 962
Seamen, Wage Increases, 631
Sea Power, Defense by, 368
Seattle, Wash., Charter, 217
  Symphony, 976
Sebastian, Proceso, 119
SEC (*see* Security and Exchange Commission)
Second War Powers Act, 1, 2, 25, 39
Second World War, 122, 123, 136, 227, 237, 286, 318, 320, 342, 345–351, 357, 358, 360, 363–366, 532, 537, 538, 582, 589, 590, 604, 616, 654, 655, 662, 674, 681, 795, 1004, 1010, 1014, 1019, 1032
  Bombardments, 447
  Dairy Products Exports, 485
  Electrochemical Advances, 793, 794
  Iran Interests during, 74
  Jewish Men and Women in, 688
  Libraries, 1052
  Milk Production, 482
  Mustard Gas in, 826
  Negro Worker in, 590
  Oceanographic Program, 771
  Spain's Attitude, 79
  Veterans of, 175, 176, 197, 312, 348, 357, 361, 362, 443
Secondary Education, 1001–1013
  Aims for, 1003
  Appropriations for, 1004, 1005
  Enrollment, 1001
  Issues in, 1006, 1007
  Negroes, 1041, 1042
  Problem in, 649
Secondary School Principals Association, 1003, 1004, 1008, 1009
Securities and Exchange Commission, 161, 321, 322
Securities Insurance Policy, 451
Security Council of the UN, 74
  Atomic Energy Commission, 80–82
  Franco Regime Problem, 79, 83
  (*see also* General Assembly; United Nations)
  Greece Issue, 76–78
  Indonesian Issue, 78
  Iranian Case, 75, 76, 129
  Lebanon-Syria Settlement, 78
  Members of, 74, 80
  Military Staff Committee, 80
  Ukrainian Council, 77
Security and Money Markets, The, 386, 394–400
  Prices, 397
Sedition Indictment, 690
Seed Crops, 479–481
Seismographs, 752, 753
Seismological Stations, 752
  Organizations, 753
  Instruments, 752, 753
  Investigations, 752
Seismology, Research in, 751
Selective Service, 1014
Selective Training and Service Act, 2, 3, 10, 11, 25, 27, 43, 44, 58, 614, 638, 657
Sellers Market, 708
Selznick, David O., 989
Semitic Languages and Literatures, 932–935
Semitic Philosophy, 932, 933
Senate Committee, Banking and Currency, 36
  Campaign Expenditures, 32
  Commerce, 562
  Investigating National Defense, 38
  Education and Labor, 22
  Finance, 29
  Foreign Relations, 14, 16
  Labor, 33
  Military Affairs, 27, 28, 37
  Naval Affairs, 26, 28, 369
  Special National Defense Investigating, 32
Senate, United States, Members, 162
  Republicans in, 62
Sensation, 861, 862
Seraphim, Archbishop, 683
Serbian War Relief, 683
Serbo-Croatian Grammars, 942
Serbs, Origin of Name, 937
Serum Albumin, Osmotic Pressure, 779
Servicemen's Readjustment Act, 247, 358, 361, 641
Services, Bureau of, 62
Seventeenth Century, French Literature, 917
  Literature, 902
Seventh Day Adventists, 665
Seyss-Inquart, Arthur, 104
Shakespeare, William, 901, 902, 941
Shapley, Harlow, 32
Sheldon, Preston King, 654, 663
Shelley Award, 877
Shelley, Percy Bysshe, 905, 906
Sherman Act, 187
Sherman, Forrest P., 368
Sherrill, Henry Knox, 669
Shidehara, Baron Kỹuro, 110, 111
Ship Sales Act, 1946, 559, 562
Ships, Bureau of, 771
  Construction Program, 747, 748
  of the Future, 369, 370
  Peacetime Uses, 745, 747
  Production, 556
  Propelling Machinery, 746
  Standards for, 371, 372
Shipbuilding, 558
  Contracts, 556
  Halt in, 368
Shipping Industry, 743
  in Virgin Islands, 239
Shipyard Production, 744, 745
Shoes, Output, 525
Shooting Star P-80's, 343
Shortridge, Guy, 770
Short Story, The, 876
Short, Walter C., 35
Shoshone Project, 312
Shostakovich, Dimitri Dimitrievich, 976
Show, Stuart Bevier, 497
Showa, Age of, 108
Siam, France Dispute, 80
  Unified, 108
Sibley, Harper, 655
Sienkiewicz, Henryk, 941
Signal Corps, Radar in, 352, 353
  Schools, 348
  of the United States Army, 702
Silicones, 792, 795
  Fluids, 719
  Polymers, Research on, 792
Silicosis, 448
Silver, 500–503
  Difluoride, 787, 788
  Industrial Use, 501, 502
  Price of, 37, 402, 403
  Stocks in the United States, 502, 503
  World Production, 501
Silver, Abba Hillel, 685
Simmons, Ernest J., 938
Simon, Dorothea Pye, 218
Simon, Herbert A., 218
Simpson, William H., 354
Sinclair, Jo, 873
Sinclair Oil Corporation, Agreement with, 631
Singapore, 106
Singer, William Henry, 959
Sixteenth Century, French Literature, 917
Skinner, Theodore H., 206
Slavic Languages and Literatures, 935–942
  Bibliography, 936, 937
  Historical Novels, 940
  Studies, 936, 937, 945
Slovak Studies, 941, 942
Slum Clearance, 842
Smallpox, 838
Smell, 862
Smith, David, 963
Smith, Gerald L. K., 690

Smith, Marian W., 868
Smith, Walter Bedell, 26
Smith, William W., 562
Smithsonian Institution, 58, 161, 168
Smyth Report on Atomic Bomb Project, 776
Snyder, John W., 10, 26, 1019
Soap Production, 526, 527
Sobor, Church, 682
Social Action Committee, 595
Social Action Department of the NCWC, 679, 680
Social Aids, Federal, 187
Social Commission, 617
Social History, 882
Social Insurance Problems, 601
  Programs, 604
Social Justice Commissions, 689
Social Problems and Conditions, 601–620
  Student Attention in, 1007
Social Psychology, 858, 859
Social Science Research Council, 1027
Social Security, 34
  Administration, 602, 839
  Amendments, 184, 187
  Board, 55, 168, 602
  Legislation, 633
  Payments, 187
Social Security Act, 20, 33, 34, 233, 239, 448
Social Service Administration, School of, 1028
Social Studies, 679
Social Welfare Administration, 1031
  for Jewish Population, 688
  State Department of, 177
Social Work, Programs, 1031
  Schools, 1031
  Training, 1031, 1032
  and Welfare, Public, 601–606
Social Workers, Demand for, 1031, 1032
Sockman, Ralph W., 659
Sodium Hydride, 793
Soft Coal Mines, Seizure of, 8
  Supply, 530
Sohon, Harry, 726
Soil Conservation Districts Act, 235
  Service, 296, 494
Soil Survey, 296
Solar Eclipse, 706
  Observations, 702, 703
Soldiers' and Sailors' Civil Relief Act, 361
Solid Fuels Administration, 320
Sonic Research, 571
Sorghum Grain, 478
Sotomayor, Antonio, 954
Sound Equipment, Technical Progress in, 740–743
Sound Amplifying Systems, 740, 741
Sound Motion Pictures, 742, 743
  Projectors, 741
Sound Optical Systems, 743
Sound Systems in Education, 741, 742
  for Hospitals, 742
South Africa, Imports Revenues, 536–539
  Indian Problem, 84
  Union of, 84, 85, 90
South America, Cosmic Ray Expedition, 784
South Atlantic Areas, 347
South, Books on the, 891, 892
South Carolina, 309
  Sculpture in, 964
South Coulee Dam, 314
South Dakota, Geology, 309
South Pole Expeditions, 767
South Semitic Literature, 934
South, Union Organization in the, 633
South West Africa, German, 140
Southern Authors' Award, 873
Southern Baptists, 666, 667
Southern Presbyterian Church, 674
Southwestern Gas and Electric Co., 728
Soviet Union, American Relations, 658, 659
  Armed Invasion of, 104
  Books on the, 893, 940
  Byrnes' Attitude, 11, 12
  Eastern Europe Control by, 31
  German Non-aggression Pact, 185
  Iranian Dispute with, 74–76, 129, 130
  London Delegation, 89
  Moslems in, 127
  Policy, 98
  (*see also* Russia; U.S.S.R.)
  Straits Controlled by, 130
  Trading Practices, 106
  Veto Power in UN, 80
  and World Bank, 88
Soybeans, 478, 479
Spaak, Paul-Henri, 82, 91
Spaatz, Carl, 342
Spain, 78, 79, 83
Spanish American Literature, 919
Spanish-American War, 232, 241
  Veterans Compensation, 362
Spanish Language and Literature, 916, 918, 919
  Bibliography, 915
Special Senate Committee to Investigate Production, Transportation and Marketing of Wool, 533
Spectroscopy, Molecular, 777, 778
Speer, Albert, 104
Spellman, Francis J., 680
Spenser, Edmund, 901
Sporn, Philip, 726
Springfield (Mass.) **Museum,** 956
Spring Wheat, 474
Sprue, 825
Stabilization Act, 61
Stainback, Ingram M., 228
Stainless Steel, 722
Staley, Kate, 768
Stalin, Joseph, 89, 98
  on War Danger, 13
Stand, Bert, 214
Standard of Living Readjustments, 623
Standard and Poor's Index, 383, 386, 394, 396, 397
Standard Provision Law, 452
Standard Screw Threads, 726
Standards, National Bureau of, 58, 760, 777, 794
Standley, Paul C., 768
Stark, Harold R., 35
Starr, Mark, 1005
Stars, Clusters, Globular, 705, 706
  Lunar Occultations of, 703, 704
Stassen, Harold E., 23, 24
  on International Affairs, 23, 24
  on National Affairs, 23, 24
  Presidential Nominee, 23
  on World Affairs, 23, 24
State Administration and Legislation, 173–182
  Administrative Boards, 195
State, Department of, 155, 156, 260
State Governments, Council of, 180, 183–186, 188–192, 194, 224, 259
  (*see also* Council of State Governments)
State Highway Department, 710
  Funds, 261
State Hospital Survey and Construction Act, 191
State School Lunch Act, 191
State, Secretary of, 60
State Veteran Affairs, 174–176, 188
  Agencies, 173, 174
  Programs, 174
States, Aviation Development in, 181, 198
  Bank Taxation, 279, 280
  Bureau of Mines, 298
  Child Labor in, 179, 651, 652
  Constitutions, Initiatives, and Referenda, 195–199
  Corporation Taxes, 278, 279
  Counties Aided by, 204
  Court Decisions, 263
  Education, 197
  Election Conduct, 200, 201
  Electoral Legislation, 199–202
  Employment Services, 180
  Executives Salaries, 195
  Expenditures, 256–259
  Finance and Taxation, 176, 177, 190, 196, 255–264
  Flood Control Projects, 189
  Geological Surveys, 298–311
  Government, 173–205
  Health Rules, 198
  Hospital and Medical Service Plans, 180, 198
  International Policy of, 199
  Labor Legislation, 178, 179, 636, 637
  Legislation, 182, 195, 196, 259, 260
  Liquor and Gambling Regulations, 199
  Medical Legislation, 179, 180
  Motor Vehicle Licenses, 283, 284
  National and Interstate Relations of the, 182–194, 224

  Nominations, 199, 200
  Officials, 191
  Penal Developments, 615, 616
  Public Health Needs, 840
  Public Welfare Legislation, 177, 178
  Registration, 201
  Rent Control, 18
  Salary Adjustments, 181, 182, 259
  Suffrage and Elections in, 198
  Taxation, 177, 255, 257, 262, 281
  Unemployment and Compensation, 180, 181, 647
  Welfare Legislation, 602, 603
State-wide Highway Planning Survey County Series, 296
Steam, Locomotive, 721
  Power, 719
Stebbins, Ernest L., 210
Steel, 503–506
  Alloys, 722
  Cost of, 503, 504
  Operations, 388
  Production, 504, 505, 528, 529
  Stainless, 722
Steel Industry, 504
  Dispute, 624
  Labor Conditions, 504
  Strikes, 504, 528
  Wages, 503, 504
Steel Market, Excess Demand, 506
Steelman, John R., 26
Stellar Spectra, 702, 704, 705
Stem Rust, 819
Stene, Edwin O., 195
Stephenson, Gilbert T., 406
Stepinatz, Aloysius, 100
Stetter, Louise D., 648
Stettinius, Jr., Edward R., 10, 26, 79
Steubenville, O., Vice Campaign, 218
Stilwell, Joseph W., 354
Stimson, Henry L., 35
Stirton, R. A., 769
Stock Exchange (*see* New York Stock Exchange)
Stock Transactions, Price Level of, 394
  Values, 397
  Volume, 398
Stocks, Carl W., 550
Stoddard, George D., 1006, 1012
Stomach, Vagus Nerves of the, 835, 836
Stone, Harlan F., 40, 42, 47, 48
Storm Troopers, 104
Straits, The (*see* Dardanelles)
  Turkey's Control of, 130
Straus, Michael W., 311
Strauss, Lewis L., 4
Stravinski, Igor, 971
Strayer, Jr., George D., 1021
Stream Pollution, 843
Street and Highway Traffic, 333–340
Streicher, Julius, 104
Streptidine, 790
Streptomyces Griseus, 829
Streptomycin, 345, 822–824, 829, 830, 835, 841
  Chemistry, 790
Strigare, Vittorio, 119
Strike Control Bill, 33
Strikes in Industry, 504, 635
  in Copper Mines, 508
  Federal Employees, 168
  in Movie Industry, 985
  in Non-Ferrous Metals Industry, 506, 507
Strike-Fear Neurosis, 504
Stritch, Samuel A., 680
Structural Engineering, 708–714
  Research Projects, 709, 710
  Wartime Research, 709
Stuart, Graham H., 122
Studebaker, John W., 1005, 1006, 1047
Students, Activities in Social Problems, 1007
  College Enrollment, 1014, 1015, 1017, 1018
  Distribution, 1015, 1016
  Married, 1016
  Teaching Practices, 1029
Styer, Charles W., 364
Styrene, 723
Submarine, as Aircraft Carriers, 366
  Armament, 366
  Atomic Energy Propulsion, 364, 365
  Development, 366, 367
  Status of, 364, 365
  United States, 369
Subway Fare, Problem of, 208, 209
Sudanese Question, 129
Sudetenland, Annexation of, 105
Suffrage in States, 198
Sugar, in Hawaii, 230
  in Puerto Rico, 234
  Research, 792
  Shortage, 524, 525
  in Virgin Islands, 238
  World Situation, 464, 465
Sulfa Drugs, 789
Sulfonamides, 830, 832
Sullivan, John L., 10, 26
Sultan, Daniel I., 343
Sumitomo, 114
Sumulong, Lorenzo, 119
Sun Bursts, 761
  Energy Output, 702–706
Superconductivity, 778, 779, 785, 786
Supervision and Curriculum Development, Association for, 1006
Supreme Commander for the Allied Powers, 107, 108
  Charter for, 108
  Constitution Liberalized, 111, 112
  Educational Reforms, 113
  General Headquarters, 109
  on Land Reform, 114, 115
Supreme Court of the United States, 165, 166, 182
  and Constitutional Law, 40–54
  Decisions, 263
  Jurisdiction, 35
  Military Trials, 42
  (*see also* United States Supreme Court)
Surety Bonds, 453
Surgeon General, Office of, 852
Surgery, 829–836
  on Mediastinal Tumors, 835
Surgical Anesthesia, 845, 846
Surgical Treatment for Congenital Pulmonary Stenosis, 834, 835
Surgical, Veterans, Facilities, 359
Surplus Marketing Administration, 58
Surplus Property Administration, 59
  Investigation Committee, 39
Surrey, Stanley S., 272
Survey Societies, 297, 298
Suter, C. M., 786
Sutherland, Edward, 214
Sweden, 80
Sweet Potato, 818, 819
Sweetser, Arthur, 135
S.W.W. (*see* Second World War)
Switzerland, Threat to, 139
Symington, W. Stuart, 342
Synagogue Council of America, 688, 689
Synchrotron, 782, 783
Synthetic Organic Chemicals, 534, 535
Synthetic Rubber, 723, 724
Synthetic Single Crystals, 754, 755
Syria, 127, 128
Syria-Lebanon Dispute with France and Great Britain, 78
Szilard-Chalmers Process, 777

TABRIZ, 76
Tacoma Narrows Bridge, 709, 714
Taft, Robert A., 8, 22, 23
  Amendment to Price Control Bill, 23
  Condemnation of Truman, 22
  Foreign Policy of, 22
  on Labor Legislation, 22, 23
  on Nuremberg Tribunal, 104, 105
Taft-Smith-Ball Bill, 841
Takasch, Basil, 680, 681
Talmadge, Eugene, 592, 594, 690
Tankers, American, 560
  World Supply, 557, 558
Taquizadeh, Hassan, 75
Tariff Act, 535, 537
Tariff Commission, United States, 531–535
Tariff Laws, Administration of, 535–540
  Reports on, 534
Taste, 862
Tax Adjustment Act, 271
Tax Administrators, National Association of, 256
Tax, Burden, per Capita, 266, 267
  Court of the U. S., 167
  Delinquency, 269

- Exemptions, 176, 276, 277
- **Tax Policy**, 9
- **Tax Problems**, 438
- **Tax Rate Changes**, 262
- **Tax Receipts**, per Capita, 268
  - Reduction, 2
  - Revision, Post-War, 271
  - State, Laws, 278, 279
  - Study Commissions, 263, 264, 275
  - Withholding, 272
- **Taxation of Airlines**, 189
  - Insurance, 444, 445
  - Property, 276, 277
  - State Finances and, 176, 177, 255–264
- **Taxes**, Automobile, 282–284
  - Petroleum, 519
  - Revenues from, 256
  - State Legislation of, 259
- **Taxonomy**, 808
- **Taylor**, Bayard, 909
- **Taylor**, Myron C., 664, 666
- **Teacher Education**, 1015, 1016, 1028, 1029
  - Commission, 1028, 1029
  - In-Service Program, 1028
  - for Negroes, 1046
  - Recruitment, 1028
  - World Problems Training, 1029
- **Teachers**, Biographies of, 887
- **Teachers Colleges**, 1016
- **Teachers**, Crisis, 1001, 1002
  - International Conferences of, 1013
  - Recruitments, 994
  - Retirement Law, 247
  - Salary Question, 993, 994, 1001, 1002
  - Strikes, 993, 994
- **Teaching Aids**, 1011, 1012
- **Technical Industrial Intelligence Committee**, 789
- **Technical Progress in Sound Equipment**, 740–743
- **Teeth Decay**, 331
- **Teflon**, 723
- **Teheran**, 75, 76, 129
- **Telegraph**, The, 324
  - Workers, Strike, 326
- **Telemetering**, 724
- **Telephone**, The, 324
  - Workers, Strikes, 326
- **Television**, 734, 735, 737, 738, 743
  - Broadcasting, 738
  - Color, 739, 740
  - in Libraries, 1034
  - Programs, 738
  - Receivers, 739
- **Temporary Controls**, Office of, 9, 62
- **Ten Best Pictures of the Year**, 986–988
- **Tennessee**, Geology, 309
- **Tennessee Valley Authority**, 161, 296, 297, 322, 709, 712, 718
  - Adult Education Activities, 1036
- **Teoloyucan**, Records at, 761
- **Terminal Leave Pay**, 37, 38
- **Terminiello**, Arthur W., 690
- **Terrestrial Magnetism and Electricity**, 757–763
  - Association of, 762
  - Department of, 757, 760, 762
  - Publications, 762, 763
- **Territories and Spheres of American Influence**, 225–248
- **Terry**, Edward P., 39
- **Tetra-ethyl Ammonium Bromide**, 834
- **Tetrafluoroethylene**, 788
- **Texas Electric Service Co.**, 728, 729
  - Geology, 309
  - Power and Light Co., 729
- **Textbooks**, 1000
- **Textiles**, Output of, 525, 526
- **Teyte**, Maggie, 972
- **Theatre**, The, 978–985
- **Theft Insurance**, 451
- **Theological Education**, 1030, 1031
  - Curriculum, 1030
  - Enrollments, 1030
- **Theological Seminaries**, Standards, 1030
- **Theophilus**, Metropolitan, 682
- **Thermal Burns**, 832
- **Thermoplastic Vinyl Polymers**, 722, 723
- **Thiouracil**, 834
- **Thomas**, Elbert, 355
- **Thomas**, Elmer, 688
- **Thomas**, Robert S., 342
- **Thompson**, Roy L., 37
- **Thrace**, 77
- **Thrombin**, 831, 832
- **Thunderstorm Research**, 758, 759, 764
- **Thymine**, 826
- **Thyroidism**, 834
- **Tien**, Thomas, 680
- **TIIC** (*see* Technical Industrial Intelligence Committee)
- **Tillema**, John A., 55
- **Timber-Cutting Survey**, 495, 496
  - Products, 495–497
- **Tin**, 510, 511
  - Bolivian, 510
  - Price, 511
- **Tiran**, Bishop, 683
- **Tires**, Automobile, 723
- **Tobacco**, 524, 525
  - Conditions, 462
  - in Puerto Rico, 234
- **Tobin**, Daniel J., 210
- **Tojo**, Hideki, 111
- **Tokyo**, 109
- **Toledo**, O., Council, 216
  - Museum of Art, 956
- **Tolstoy**, Leo, 938
- **Tomato**, 818
- **Tomlinson**, F. S., 118
- **Tone Synthesizer**, 977
- **Tongass National Forest**, 226
- **Topographic Maps**, 286, 287, 291, 292, 294, 295, 299
  - Surveys, 289. 290
- **Topology**, 699, 700
- **Toscanini**, Arturo, 966, 972
- **Touch**, 861
- **Towers**, John H., 342
- **Toxicity**, Plant, 815
- **Trade Agreements Act**, 532
- **Trade Agreements**, Proposed, 534
  - Employment in, 643, 644
  - Expansion, 411, 412
- **Trade Policies**, 425, 426
  - Bilateral Agreements, 428
- **Traffic Conditions**, 324, 551–553
  - Control, 212, 336
  - Engineers Training, 339
  - International, 540
  - Legislation, 338, 339
  - Problems, 339, 340, 540, 541
  - Street and Highway, 333–340
- **Traffic Safety**, Conference on, 221
  - Education in Schools, 339
  - Problems, 221
- **Transit**, 324
  - Advisory Committee, 209
  - Authority, 207
  - Community, 551–556
  - Fares Increased, 554
  - Labor, 553, 554
  - Improvements, 555
- **Transit Operations**, 552, 553
  - Radio Program, 554, 555
- **Transit Vehicles**, 553, 554
  - Workers Union, 208, 209
- **Transjordan**, 80, 128, 130, 131
- **Transport Workers Union**, 208, 326
  - Strike, 207
- **Transportation in Alaska**, 228
  - Board of, 209
  - Equipment, 530, 726
  - Manufactures and, 521–574
  - Map of the U. S., 292
  - Strikes, 326
  - Study of, 546
- **Travel**, 890–895
- **Treasury**, Department of, 56, 156, 157
  - Operations, 401, 402
- **Trial by Jury**, 48, 49
- **Trieste**, 95, 97
  - Future of, 90, 92, 93
  - Internationalization of, 13
- **Trimetrogon System of Mapping**, 293
- **Tripartite Pact**, 105, 106
- **Tripolitania**, Italian Colonies, 128
- **Trolley Cars**, 551
- **Tropical Diseases**, Protection against, 792
- **Tropical Medicine**, School for, 234
- **Truck Industry**, 550
  - Strike in, 210, 211
- **Truesdell**, Leon E., 575
- **Truman**, Harry S., 40, 119, 232, 233, 673
  - Armed Forces Plan, 6, 7
  - Army Day Address, 3
  - On Atomic Energy, 4
  - Budget Messages, 1, 2, 25, 250, 255, 271
  - Church Address of, 656
  - on Civil Air Patrol, 344
  - Civil Rights Committee Appointed, 595
  - on Colleges, Bias, 691
  - Doctorate for, 680
  - on Education Appropriations, 1005
  - on European Refugees, 588
  - Fact-Finding Board, 624
  - Fisheries Jurisdiction, 194
  - on Food Shortages, 459

  - Foreign Policy, 4, 5
  - Great Britain Loan, 4, 30
  - Highway Safety Conference, 336, 337
  - Industrial Strife Committee of, 634
  - on Labor Legislation, 7, 8, 33
  - Land Reorganization Plan, 317
  - on League of Nations, 136, 139, 140
  - Legislative Program, 1, 2
  - on Lend Lease, 10
  - on Military Training, 7, 133
  - Mines Taken over by, 625
  - Navy Appropriations, 368
  - Nine-Point Food Program, 459, 460
  - on Oil Tidelands, 35
  - Palestine Policy of, 5, 127, 128, 684, 685, 687–689
  - on Philippine Political Affairs, 116
  - Policies of, 1–10, 633, 634
  - on Price Administration Office, 8, 9, 36, 466, 629, 630
  - Railroad Emergency, 7, 541–543, 545, 626
  - Recommendation Plan, 602
  - Reorganization Plan, 448, 839
  - on Shipbuilding Economy, 556
  - State of the Union Message, 25
  - on Tax Receipts, 249
  - UN Message of, 5, 6
  - and United States Employment Services, 180, 183, 184, 591
  - on Vatican Representative, 664, 665
  - Veteran and Education Report, 1019
  - on Wage Policy, 7
  - and Wallace, 98, 106
  - on World Famine, 681
- **Trust Business,** 406–408
  - Compensation, 407, 408
  - Conferences, 406
  - Legislation, 406, 407
- **Trusteeship Council of UN,** 84–86
  - Objectives, 85
- **Tsaldaris,** Constantin, 78
- **Tuberculosis Service,** 359
- **Tubocurarine,** 829
- **Tuck,** William M., 326
- **Tucker,** Henry St. George, 669
- **Tudeh Party,** 74, 76
- **Tudor Period,** Early, 899, 900
- **Tugwell,** Rexford G., 232
- **Tula Lake,** 312
- **Tuna,** Production of, 492
- **Tunnels Under Construction,** 314, 315
- **Tuomey,** Mary C., 1050
- **Turgenev,** Ivan Sergeevich, 939
- **Turkey,** 102
  - Big Three Conflict, 129, 130
  - Loan to, 107
  - the Straits Problem, 130
- **Turner,** Thomas W., 1042
- **Turtle Islands,** 118
- **TVA** (*see* Tennessee Valley Authority)
- **Tuve,** Merle A., 762
- **Twain,** Mark, 909
- **Twentieth Century Literature,** 907, 908
  - French, 918
- **Tydings,** Millard, 118
- **Typhus Commission,** U. S., 59

- **U-BOATS,** German, 365–367
- **Ukrainian SSR,** 90, 94
  - Bishop, 682
  - Charge against Greece, 77
  - Literature, 940
  - Resolution on Indonesia, 78
- **UMWA** (*see* United Mine Workers of America)
- **UN** (*see* United Nations)
- **Un-American Activities,** 44
  - House Committee on, 32
- **Unemployment,** 621, 622
  - Compensation, 180, 181, 261, 604, 645, 646
  - Increase, 582
  - Insurance Claims, 647
  - Offices, State, 362
  - in States, 647
  - Statistics, Employment and, 640–647
  - Taxes, 256
- **Uniform State Insecticide, Fungicide and Rodenticide Act,** 191
- **Uniform State Laws,** National Conference of Commissioners, 192
- **Uniform Traffic Laws and Ordinances,** Committee on, 338
- **Uniform Vehicle Code,** 338
- **Union Advisory Committee on International Affairs,** 640
- **Union of American Hebrew Congregations,** 689
- **Union for Theoretical and Applied Mechanics,** 715
- **Unions,** Federal Regulations of, 634
  - in Industries, 632
  - Membership of, 632
  - Negotiations with Employers, 631, 632
  - Wage Increases for, 630, 631
- **United Kingdom,** Board of Trade, 391
  - (*see also* Great Britain)
  - Tax Treaties with, 278
  - Trade Market, 426, 427
- **United Artists Corporation,** 989
- **United Brethren in Christ,** 663, 670
- **United Business Education Association** 1021
- **United Council, of Church Women,** 659, 660, 673
- **United Electrical, Radio and Machine Workers,** 624
- **UNESCO** (*see* United Nations Educational, Scientific and Cultural Organization)
- **United Lutheran Church,** 671
- **United Mine Workers of America,** 621, 625, 631
  - Attack on Wage Stabilization by, 631
- **United Nations,** 2–5, 74–88, 844
  - Activities of, 1040
  - Atomic Energy Commission, 11, 14, 668, 674
  - American Leadership, 136, 137
  - Charter, 3, 74, 78, 86, 88, 90, 91, 140, 199, 662
  - Church Council and, 656
  - Economic and Social Council, 430, 534, 639, 640
  - and ILO, 87
  - International Penal and Penitentiary Commission under, 617
  - League Taken over by, 135–138
  - Negro Petition to, 593
  - New York Site for, 84
  - Outlook for, 88
  - Palestine Trusteeship, 684
  - Philippines in, 116, 119
  - Plebiscite Commission, 673
  - Representatives, 26
  - Straits Problem, 130
  - Trieste Problem, 92, 93
  - Trusteeship Council, 84–86, 140, 673
- **United Nations Educational, Scientific and Cultural Organization,** 30, 31, 86, 223, 679, 715, 716, 762, 995, 1012, 1013, 1029, 1037
  - Aims, 87
  - Conference, 86, 87
  - Philippine Delegation to, 119
- **U. N. Food and Agricultural Organization,** 22
- **United Nations General Assembly,** 5, 6, 11, 12, 15, 17
  - (*see* General Assembly of the UN)
- **United Nations Relief and Rehabilitation Administration,** 21, 22, 136, 412, 426, 462, 557, 558, 655, 656, 686, 687
  - Book Shipments, 1053
  - Epidemiological Functions, 836
  - Shipments, 413, 414, 417
  - Termination of, 83
- **United Nations Security Council,** 10–12, 15
  - (*see* Security Council of the UN)
- **United Negro and Allied Veterans of America,** 594
- **United Public Workers of America,** 219, 630
- **United Service for New Americans,** 686, 687
- **United States, The,** 4–6, 13, 20, 82, 100, 688
  - Atomic Energy Views, 82
  - China Policy, 6
  - Civil Service in the, 167–171
  - Coast Guards, 56, 60
  - Czechoslovakia Relations with, 100

  Displaced Jews Entry to, 688
  Earthquakes in, 751, 752
  Emergency Service, 460
  and Europe, 98–107
  Exports, 420, 421
  Fisheries Production, 492
  Flag Vessels, 558–560
  Food Supplier to World, 458
  Foreign Ministers Meeting, 90
  Foreign Policy, 4, 5, 20
  Forest Service, 495–497
  Gas and Oil Refineries, 517, 518
  Geological Survey, 298, 299
  German Policy, 13, 106
  Good Neighbor Policy of, 122
  Great Britain Financial Agreement, 4
  Health of the, 837
  History, 881
  Imports, 422–424
  Iran Oil Interest, 74
  Isolation of, 136
  Japan Attack on, 105, 106
  Japanese, Educational Mission, 679
  Lake Survey, 290
  League of Nations, Position of, 136
  Lending Policy, 106
  Merchandise Trade of, 412, 413
  Military Academy, 348
  Naval Research Laboratory, 794
  Oil Wells, 516–518
  Pacific Bases, 6
  Palestine Policy, 127, 684, 685
  and the Peace Treaties, 89–98
  Petroleum Dominance of, 515, 516
  Philippine Relations, 116, 118, 119
  Population Growth, 575–577
  Race Conditions in, 587–597
  Ships of, 369
  Silver Stocks in, 502, 503
  Soviet Policy, 98, 99
  Submarines, 369
  Trust Territories, 85
  Trusteeship of Japanese Mandated Islands, 140
  Typhus Commission, 59
  Veto Power in UN, 80
  War Crimes Commission, 117
  Weather Bureau, 725
United States Armed Forces Institute, 1011
United States Army, The, 342–356
  (*see also* Army, United States)
  Caste System in, 346, 347
  Cost per Soldier, 347
  Servicemen's Post-war Education, 347, 348
  Strategic Air Force, 347
  Surgeon General, 346
  Technicians, 346
United States Atomic Energy Commission, 160
United States Attorney's Office, 167
United States Bureau of Mines, 227, 513
United States Coast and Geodetic Survey, 752, 753, 757, 759–760, 762, 771, 772
United States Courts, 165–167
  Circuit Court of Appeals, 166
  of Claims, 167
  of Customs and Patent Appeals, 166, 167
  Supreme Court (*see* United States Supreme Court)
  Tax Court, 437
U. S. State Department, Office of Information and Cultural Cooperation, 1053
  Art Tours of, 953, 954
United States Employees Compensation Commission, 55, 448
United States Employment Service, 58, 168, 591, 638
  Return to States, 23, 26, 34, 180, 183, 184
United States Food and Drug Administration, 831
United States, Foreign Service of, 131–135
United States Government, Bond Prices, 254, 255
  Debt, 252
  Life Insurance, 360, 361
  Securities, 253, 254
United States Housing Act, 613, 614
United States, International Affairs Affecting the, 74–154
United States, and Latin America, 122–126
United States Marine Corps, Supply Department, 57
United States Maritime Commission, 161, 345, 556–563
United States Marshal's Office, 167
United States Merchant Marine, 744, 745
United States and the Middle East, 127–131
United States Navy (*see* Navy, United States)
United States Office of Education, 1000, 1005, 1006, 1014, 1018, 1021, 1040, 1048
United States Public Health Service, 329, 486, 839, 842, 843
  Vital Statistics Transferred to, 852
United States Public Roads Administration, 333, 334, 338
United States Supreme Court, Labor Decisions, 637, 638
  Race Relations Decisions, 597
  Railroad Actions by, 545
  (*see also* Supreme Court of the United States)
United States Tariff Commission, 160, 531–535
  History of the, 532
  Work of, 532, 533
United States Treasury Debt Retirement, 254
United States-United Kingdom Death Tax Convention, 20, 281
United Steel Corporation, 624
  Workers, 624
United World Films, 989
Universal-International Merger, 989
Universal Military Training, 3, 28
Universal Pictures, 989
Universities (*see* Colleges)
University Extension Courses, 1037–1039
University Programs for Public Administration, 1027, 1028
UNRRA (*see* United Nations Relief and Rehabilitation Administration)
Upper Basin States, 193
Uranium, 14, 716, 787
Urban Traffic Problem, 339, 340
Urgent Deficiency Appropriation Bill, 44
Urticara, 826
Uruguay, 86, 122
USES (*see* United States Employment Service)
USSR, German Attack Planned, 105
  Import Revenues, 536–539
  Loan to, 106
  (*see also* Russia; Soviet Union)
  Trust Territories, 85, 86
  and United States, 98, 99
  Western Powers, Conflict with, 92
Ustashi Group, 100
Utilities, Public, 320–326
  Employment in, 643, 644
  Public Resources and, 286–341
  Segregation of, 330
  Strikes, in, 326
Utility Workers Union in America, 326, 632

VA (*see* Veterans Administration)
Vaccination Programs, 838
Vaccine, Value of, 841
Vagotomy, 836
Vandenberg, Arthur H., 15–17, 98
  Atomic Energy Amendment, 15
  on Foreign Affairs, 16
  Senatorial Duties of, 16
Van Doren, Mark, 877
Van Drebbel, Cornelius, 367
Van Kleffens, Eelco N., 80
Vascular Surgery, 834
Vatican, Funds Distributed, 676, 677
  United States Representation at the, 664–666
Vaughn, K. W., 1023
V-E Day, 577, 629, 641, 648
Vegetable Crops, 463

Vegetable Insects, 489
Vehicles, Standards for, 335, 336
Venereal Diseases, 345, 346, 1049
Venezia Giulia, Conflict over, 92
Venezuela, Expedition to, 769, 770
  Military Mission, 123
  Oil in, 515
Ventilating, 725, 726
Vermont, Geology, 309, 310
Vernay, Arthur, 770
Verne, Jules, 367
Veterans Administration, 37, 161, 345, 356, 357, 644, 1010
  Dental Service, 359
  Finances for, 357, 363, 1020
  Guidance Centers, 1019
  Guardianship, 363
  Homes for, 359, 360
  Hospitals for, 358, 359, 675, 678, 713
  Insurance Service, 357, 441, 443
  Medical Services, 358, 359, 842
  National Defense Program, 357
  Negro Education, 1047
  Prosthetic Service, 359
  Real Estate Service, 363
  Surgical Facilities, 359
  Tuition Plan of, 1017
  (*see also* Veterans Affairs)
Veterans Affairs, Administration of, 356–363
  Agencies, State, 173, 174
  Aid in Counties, 203
  Benefits, 197
  Bonus Legislation, 175
  Business Education for, 1022
  and the Churches, 664
  College Education for, 1015–1017, 1019
  Compensation and Pensions, 362, 363
  Education, 174, 175, 361, 362
  Employment, 175, 176, 444
  Guidance, 1010, 1011
  Hospitals, Building Program, 842
  Housing for, 173, 175, 606–612
  Indian, 598
  Insurance for, 360, 361
  Job Placements, 622
  Lands for, 312
  Legislation, 176
  Loans for, 362
  Medical Care and Services for, 358, 842
  in Minority Groups, 594
  Negro Education, 1047
  Post-war Readjustment, 357, 358
  Readjustment Allowances, 362, 647
  School Attendance, 582–585
  State Programs for, 188
  Study Program, 1032
  Tax Exemptions, 176, 276
  Training Programs, 174
  War Service Insurance for, 37, 38
  (*see also* Veterans Administration)
Veterans Emergency Housing Act, 608, 612
Veterans of Foreign Wars, 38, 688
Veterans Priority Bill, 37
Veto Power, 82, 83
Vibration Research, 752, 753
Vice President, 155
Vickery, Howard F., 606
Victory Loan, 400, 401
Victory Ships, 560, 562
Vining, Elizabeth Gray, 110
Vinson, Frederick M., 10, 30, 26, 40, 49, 271
Vinyl Resins, 723
Virginia, Bank Taxes, 280
  Biennial Art Show, 960
  Geology, 310
  Public Welfare Program, 603
  Reemployment Bill, 171
Virgin Islands of the United States, 237–240
  Agricultural Development, 240
  Cost of Islands, 237
  Economic Conditions, 237, 238
  Education in, 239
  Finances, 238
  Health, 238
  Legislation in, 239
  Rum from, 238, 240
  Self-government in, 2
  Shipping, 239
  Sugar Industry, 238
Virgin Islands Company, 239, 240
Vishinsky, Andrei Y., 77
Vision, 861
Vital Records, Commission on, 852
Vital Statistics, 55, 847–854
  Functions, 839
  Office of, 577, 580
  Publications, 853, 854
Vitamin B and C Deficiency, 844
Vitamin K, 843, 844
V-J Day, 320, 322, 345, 412, 464, 510, 546, 562, 577, 587, 589, 606, 613, 623, 624, 626, 628–630, 638, 640, 641, 645, 648, 716, 737, 935
  Labor Force after, 646, 647
Vocational Education, Federal Board, 55
  Negro, 1049
Vocational Guidance, 1009
Volcanic Activity, 753, 754
Volcanoes, Earthquakes and, 751–754
Voluntary Health Insurance Plan, 841
Von der Becke, Carlos, 123, 126
Von Koenigswald, Ralph, 951
Von Neurath, Constantin, 104
Von Papen, Franz, 104
Von Ribbentrop, Joachim, 104–106
V-2 Rockets, 353, 784
Von Schirach, Baldur, 104
Vulcanology, Research in, 751

WAA (*see* War Assets Administration)
WAC (*see* Women's Army Corps)
Waddell, Mrs. Chauncey L., 1044
Wadsworth, James, 216
Wage Controls, 629
Wage, Labor Demands, 623–625, 631, 632
Wage-Pattern Policy, 624, 625, 629
Wage-Price Problems, 7, 628, 629
Wage Stabilization Policy, 631
Wagner-Ellender-Taft Bill, 32, 842
Wagner-Murray-Dingle Bill, 841
Wagner, Robert F., 23
Wainwright, Jonathan, 354
Waitt, Alden H., 343
Walker, Frank C., 46
Walker, Walton H., 354
Wallace, Henry A., 4, 5, 19–21, 30, 592, 1005
  on Atomic Energy, 20
  in Congress, 20
  Baruch Controversy, 14, 21
  Byrnes Controversy, 4, 5, 13, 20, 91, 92, 98, 99
  Foreign Policy of, 106
  on Great Britain Policy, 20
  Resignation of, 5, 20, 24
  on Soviet Union, 20
Wallander, Arthur W., 206, 213, 588
Walter Engine, 365
War Agencies, 532
  Map Resources, 295
War Assets Administration, 39, 59, 433, 450, 519, 609, 1018
  Corporation, 59, 644
War-Built Ships, 562
War Casualties, 347
  Contracts, 38, 39
  Emergency Program, 234, 235
  Financing, 254
  Food Orders, 464
  Histories, 880
  Libraries, Devastated, 1053
  Powers, 39
  Prisoners of, 352
  Reserves, 434, 435
  Service Insurance, 37, 38, 439, 441
  Surplus, 39
  Vessels, Reconversion of, 745, 747
War Criminals, 342
  Executions, 117
  Trials of, 42, 43
War Damage Act, 117, 120
War, Department of, 35, 38, 57, 59, 60, 62, 157, 346, 353
  Appropriations for, 28
  Casualty Statistics, 347
  Contracts, 347, 349
  Salvage and Surplus, 354, 355
War Information Office, 62, 228
  Closing of, 1053
War Investigating Committee, 38, 39
War Labor Disputes Act, 634

War Manpower Commission, 638
War Mobilization and Reconversion, Office of, 9, 26, 59, 62, 104, 368, 632
War Powers Act, 345
War Production Board, 535
  Controls Lifted, 607
War Records, Bureau of, 688
War Relief Services, 677, 678
  Europe and the Far East, 677
War Relocation Authority, 61, 687
War Risk Insurance, 360, 361
  Act, 361
War, Secretary of, 348
War Shipping Administration, 184, 562
War Stabilization Board, 210
Warnshius, A. Livingston, 655
Warren, Lindsay C., 38
Warships, Atomic Power for, 373
Wartime, Astronomical Research in, 701
  Birth, Marriage and Death Rates, 847–849
  Censorship, 822
  President's Powers, 10
  Price Stabilization Program, 465
  Shipbuilding Program, 369–371
Wartime Government Supply Controls, 483, 484
Washington Award, 727
Washington, D. C., Employment Service, 591, 592
  FAO Headquarters, 136
  PICAO Conference, 88
  Post-war Program, 106
Washington, George, Land Ordinance, 317
Washington, Geology, 310
  State College, 956
Water-borne Commerce, 376, 377
Water Compact, Interstate, 192, 193
Water Pollution Control, 328
  Purification, Electronic Principle, 330
  Rates, 329
  Table, 328
Water Treatment, Activated Silica, 330
Water Power Plant, Valve Actuator, 332
  Utilization of, 320
Water Resources, 709, 711
  Alabama, 299
  Arizona, 299
  Arkansas, 299
  Authority, 236
  Committee, 188
  Florida, 300
  Georgia, 300
  Illinois, 302
  Indiana, 302
  Iowa, 302
  Kansas, 303
  Kentucky, 303
  Louisiana, 304
  Maryland, 304
  Michigan, 304
  Minnesota, 304
  Mississippi, 305
  Missouri, 305
  Montana, 305
  Nebraska, 306
  New Hampshire, 306
  New Jersey, 306
  North Carolina, 307
  North Dakota, 307
  Oklahoma, 308
  Pennsylvania, 308
  Rhode Island, 309
  South Dakota, 309
  State Activities for, 189
  Tennessee, 309
  Virginia, 310
  West Virginia, 310
  Wisconsin, 310
  Wyoming, 311
Watershed Reforestation, 328
Water Supply, 327–332
  Fluorine in, 331
  Sources, 327
Waterways and Harbors, 373–380
  Channel Improvements, 373, 374
  Inland, 375
  Intracoastal, 374, 375
Water Works Construction, 327
  Employees, Compensation, 329
  Engineering, 327
  Private Ownership vs. Public, 329
Watson, Gordon B., 44, 45
Watts, Lyle F., 496
Waymack, William W., 4
Ways and Means Committee of the House of Representatives, 532–534
Weather Bureau, 297, 758, 760, 763–766
Weather Observations, Machine Tabulation, 766
Wedemeyer, Albert C., 354
Weed Control, 817, 818
Weeks, O. Douglas, 199
Weidenreich, Franz, 951
Weizmann, Chaim, 128
Welch, Herbert, 672
Welfare Functions, Integration of, 602
Welfare Legislation, 222, 601–603
West, Books on the, 892
West Coast Longshoremen Strike, 632
West Indian Conference, 239
West, W. Reed, 244
West Virginia, Geology, 310
Western Association of Railway Executives, 545
Western Defense Command, 589
Western Europe, Trade Programs, 427, 428
Western Hemisphere, Commodity Distribution, 417–419
  Geographical Observatory, 759
  Imports, 419
  Mapping Services in, 297
  Regional Pact, 4
  Seismology in, 753
Western Powers, *vs.* Russia, 102, 103
  Straits Disagreement, 130
Western Union Telegraph Co., 324, 326
Westinghouse Electric Corporation, 717
WFTU (*see* World Federation of Trade Unions)
Wheat, 472–474, 815
  for Famine Relief, 460, 461
Wheeler, Raymond A., 343, 373
Wherry, Kenneth S., 8
White-Fringed Beetle, 488
Whitehead, Robert, 367
White Paper, 1939, 684
White Pine Blister Rust, 491
Whitney, A. F., 7
Whitney-Metropolitan Museum, 956, 959, 960, 963, 964
Whyburn, G. T., 695
Wickersham Commission, 616
Wiesbaden, Museum, 952
Wildt, Rupert, 700
Willard, William R., 836
Willgerodt, Reaction, 791
William Rockhill Nelson Gallery, 956
Williams, William Carlos, 878, 895
Willoquet, Gaston, 119
Willoughby, Alfred, 214
Wills, William H., 734
Wilson, Edmund, 874
Wilson, Woodrow, 137
Winant, John J., 26, 534
Wines, Enoch, 617
Winsor Dam, 328
Winter Wheat, 472, 474
Wisconsin, Geology, 310, 311
  Profit Sharing Plan, 329
  Retirement System, 171
  University of, 1027
  Water Tables, 328
Wise, Stephen S., 684
Witherow, Grace A., 411
Withholding Tax, 272
Witsell, Edward F., 343, 353
Witty, Paul A., 1048
Witwatersrand, 500, 501
Wolman, Abel, 328
Women's Army Corps, 355, 356
  Integration Act of 1946, 356
Women Artists, Society of, 963
Women on Juries, 199
Women Painters and Sculptors, National Society of, 963
Women Voters, League of, 1040
Wonder, Frank C., 768
Wood, Ledger, 863
Woods Hole Oceanographic Institution, 773
Woods, K. P., 335
Wool Industry, Reconversion, 462, 463
Wordsworth, William, 905
Work, Experience, 1009
  Stoppages, 635
Work-Study Programs of Schools, 649
Workers Education, Bureau of America, 1039
Workers, Travel Time of, 637
Workmen's Compensation Insurance, 448, 449, 636

World Bank, 88, 136
World Conference of the Teaching Profession, 1013
World Council of Christians and Jews, 662
World Council of Churches, 654, 655, 657, 658, 664, 669, 671
World Court, 31, 88, 140, 141
  Countries Represented, 88
World Engineering Conference, 715
World Famine, Campaign against, 21
  Eastern, 681
World Federation of Trade Unions, 86, 639, 640
World Fleet of Merchant Vessels, 557, 559
World Food Board, 87
World Forestry Organization, 497, 498
World Free Press Resolution, 15, 19
World Health Assembly, 836
  Organization, 86, 139, 222, 836, 837, 844, 845, 853
World Mission Crusade, 666
World ORT Union, 687
World Peace, 531, 654, 655
World Problems, Training for, 1029
World Radio Conference, 736
World Relief, Bishops Fund for, 669
World Telecommunications Conference, 735
World Trade, 4
  Multilateral, 106
  Program for, 429, 430
World War I (*see* First World War)
World War II (*see* Second World War)
World Zionist Congress, 128, 686
Wounds, 832
Woytkowski, Felix, 769
WPB (*see* War Production Board)
Wyatt Housing Program, 220
Wyatt, Wilson, 8
Wyoming, Geology, 311

X-RAY, 836
  Treatments, 827, 828, 833
Xylem, 815

YALTA Conference, 99, 100
Yamashita, 41–43, 113, 117
Yasuda Group, 114
Year in Congress, 24–40
  (*see* Congress)
Yemen, 128, 131
Yerkes Observatory, 704–706
Yeshivah Schools, 689
Yiddish Language, 689
  Scientific Institute, 689
YMCA (*see* Young Men's Christian Association)
Yoshida, Shigeru, 110
Young Folks Book Club, 996
Young, G. Douglas, 932
Young, Malcolm O., 885
Young Men's Christian Association, 662
  Citizen Education, 1035
  Racial Discrimination Action, 595
Young Peoples Symphony Series, 972
Young Women's Christian Association, 662
  Racial Discrimination Action, 595
Yousab, Amba, 683
Youth Conference, 1003
Youth Correction Authority Act, 615
Youth Employment, 648, 649
Youth Program Planning, 222, 223
Yugoslavia, 77, 90, 92–94, 1053
  American Airplanes Attacked by, 91, 100
  Linguistics and Literature, 942
  Reparations to, 95
Yukon, Oil Development, 38
YWCA (*see* Young Women's Christian Association)

ZAIBATSU, 113, 114
Zhidkov, J. I., 661
Zimmerman, Frederick L., 182
Zinc, 511
  Bearing Clays, 756
  Electrowinning of, 794
Zionism, American Jewish Attitude to, 686
Zionist Activities, 685, 686
  Aims, 127
  Case, 684
  Groups, 685
Zionists in Palestine, 127
Zirconium, 794
Zlobin, John, 682
Zoning Laws, 212, 220
  Plans for Cities, 220